

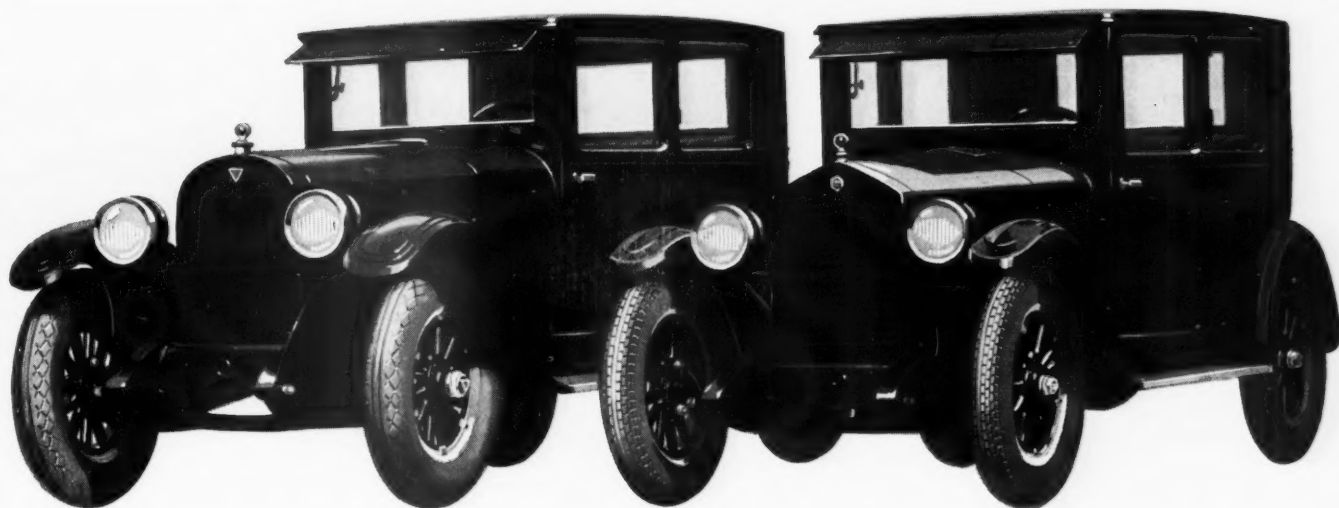
In This Issue—*Tying Up Equipment With Sales*

MOTOR AGE

Vol. XLVII
Number 15

PUBLISHED WEEKLY AT 5 SOUTH WABASH AVENUE
CHICAGO, APRIL 9, 1925

Thirty-five Cents a Copy
Three Dollars a Year



World's Largest Selling 6-Cylinder Closed Cars

ESSEX
COACH

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HUDSON
COACH

\$1345

SEDAN

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\$1795 \$1895

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Make Money Selling Them

Largest production and sales in Hudson-Essex history open big new opportunities for dealers.

Hudson and Essex dealers are prosperous. Everyone in the trade knows that. The line affords unequaled advantages. Small line of cars to stock—three Hudsons and one Essex—all fast sellers, which means fast turning capital.

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Retail price East of Mississippi. Slightly higher elsewhere. Attractive discounts to the trade. Ask your jobber.



Now~ a real mechanics Rim Tool As distinctive as Bonney "C-V" Wrenches~

AN entirely new and better Rim Tool for shop or car owner use. Built to the same high quality standards as the famous Bonney Wrenches. For all split rims—including the Kelsey.

Compact, powerful, quick-acting. Made of drop forgings—not malleable or gray iron castings. All working parts are hardened to withstand abuse.

Packed the Bonney way in at-

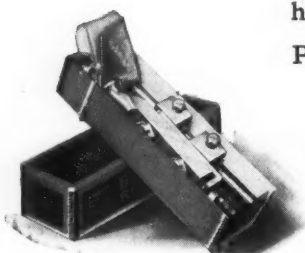
tractive black and orange carton that makes an attractive display for your accessory department. Strong canvas carrying case included with each tool.

Now in production and ready for deliveries through all regular Bonney Jobbers.

Made in U. S. A. by

BONNEY FORGE & TOOL WORKS

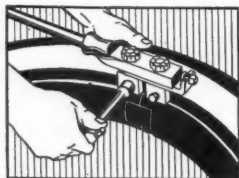
Allentown, Pa.



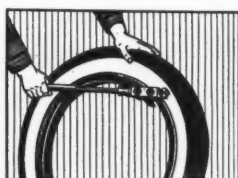
BONNEY RIM TOOL

U. S. PAT. PEND.
CANADA PAT. 1924

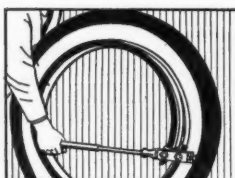
Also makers of Chrome Vanadium Wrenches, Carbon Steel Drop Forged Wrenches, Vises, Pliers and Drop Forgings.



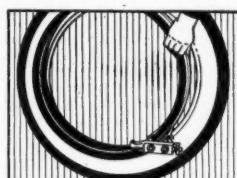
1. First, attach jaws securely on each side of the split by pulling set screws tight.



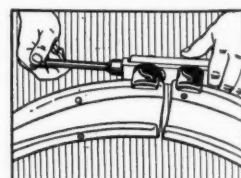
2. Then, insert the handle and roll the tire forward. The split will open smoothly, and the tire can now be removed.



3. Even a rusted on tire will come off easily and without damage.



4. One semicircular sweep of the handle is all there is to the operation. The handle can then be removed.



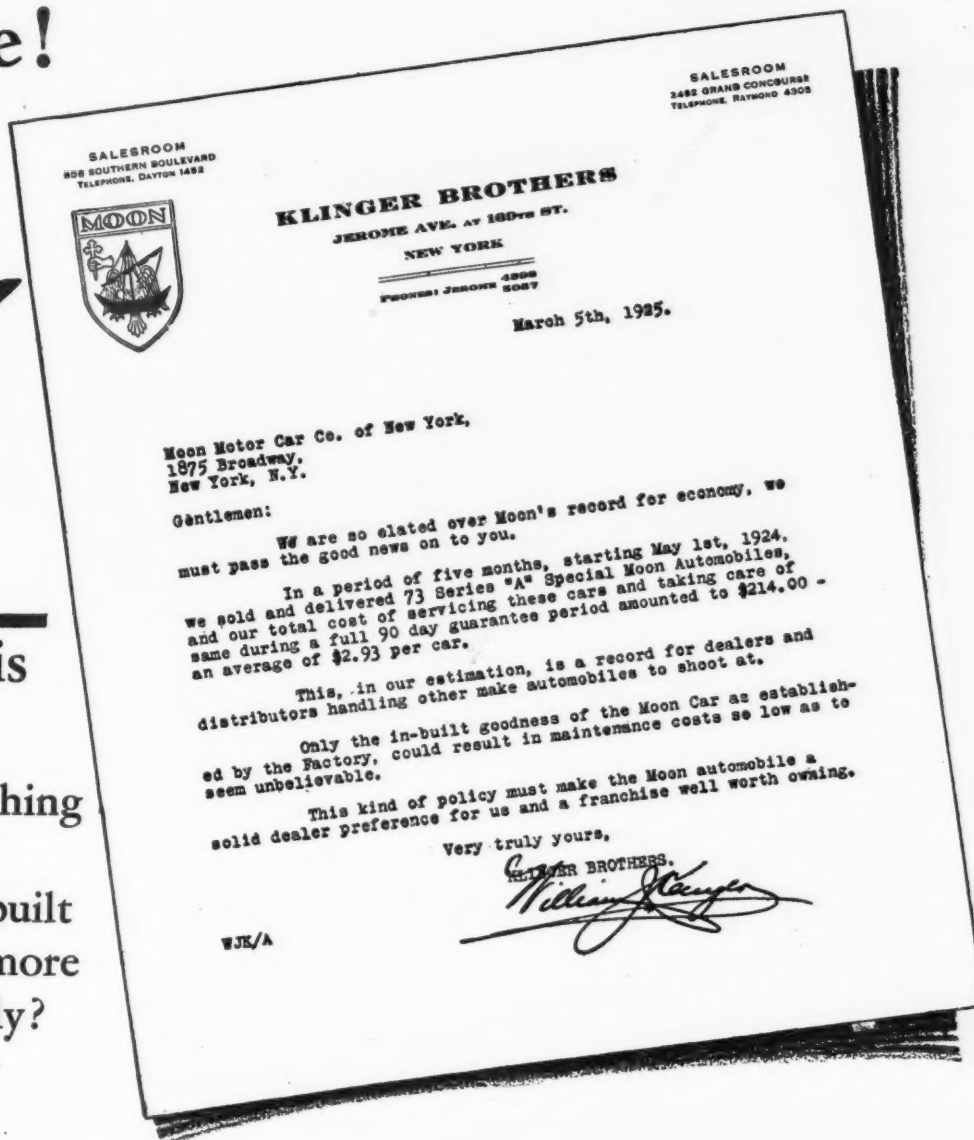
For Kelsey Rims

A special set screw spreads the split on Kelsey Rims.

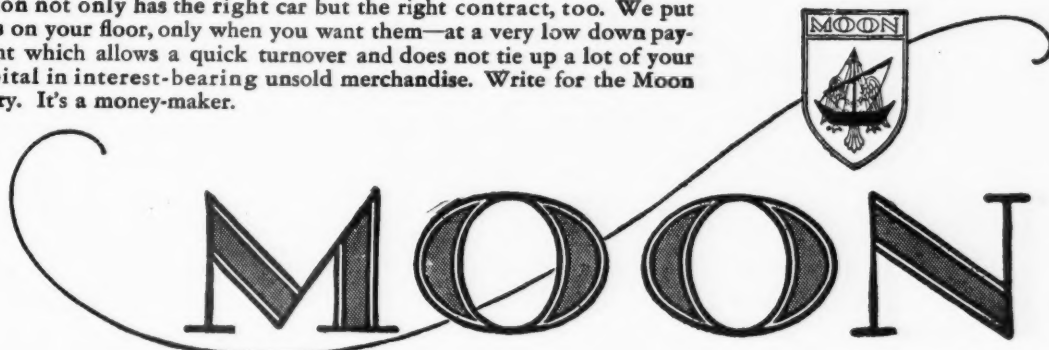
73 Moon Cars Cost only \$2.93 per car for 90 day guarantee service!

Read this letter!

Could anything else prove Moon's inbuilt goodness more conclusively?



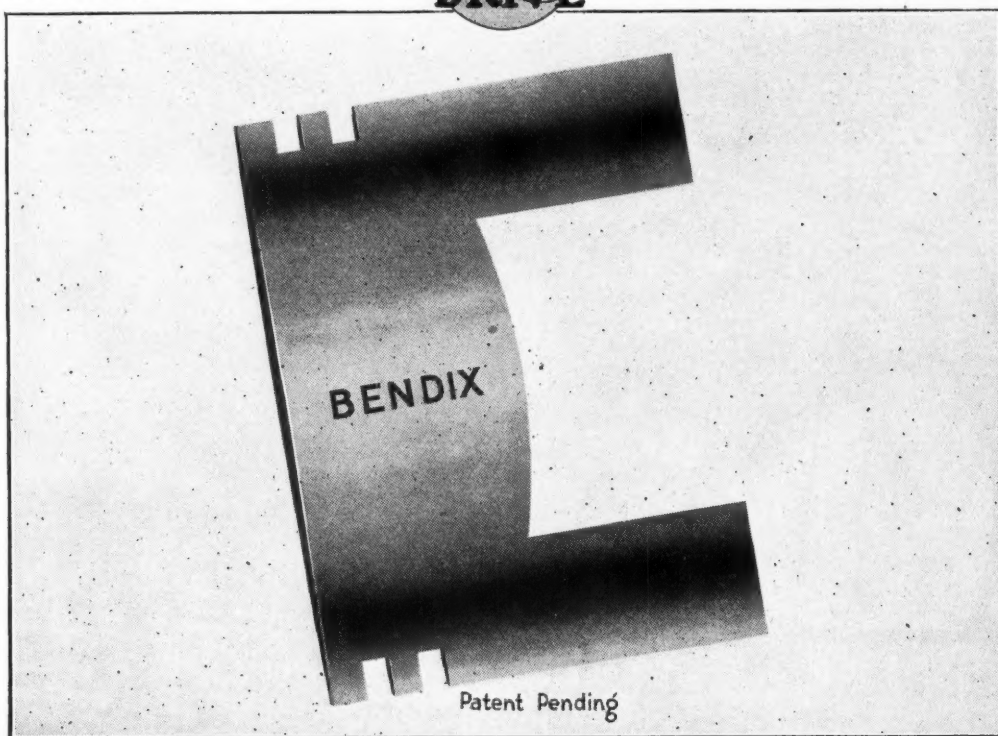
Moon not only has the right car but the right contract, too. We put cars on your floor, only when you want them—at a very low down payment which allows a quick turnover and does not tie up a lot of your capital in interest-bearing unsold merchandise. Write for the Moon Story. It's a money-maker.



MOON MOTOR CAR COMPANY, ST. LOUIS, U. S. A.

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FINE WORKMANSHIP DEPENDABLE QUALITY



CAUTION: In our Bendix Drive advertisements, appearing regularly each month in The Saturday Evening Post and The Literary Digest, the public is being cautioned to buy none but genuine parts and to look for the name "Bendix" on each part.

Easily and Quickly Installed

The Eclipse Bendix Repair Sleeve requires no special tools for installation. Only a hammer and blunt chisel. Four sizes service all models.

It pays to sell none but
GENUINE PARTS
 FOR
BENDIX
 DRIVE



ECLIPSE MACHINE COMPANY, ELMIRA, N. Y.

ECLIPSE MACHINE COMPANY Ltd., WALKERVILLE, ONTARIO

MOTOR AGE

Reg. U. S. Pat. Office

Vol. XLVII

No. 15

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A Flat Rate Forum

MOTOR AGE has been a flat rate forum for a long time. For nearly two years we have been discussing the subject from all angles, and giving our readers the benefit of the latest and best information available on the subject. And now, in recognition of the importance that the subject has assumed, we are setting aside a certain portion of our Editorial pages each week and labeling it "The Flat Rate Forum." We are officially assuming a title that has belonged to our pages for a long time.

This means two things. First, we believe the subject of Flat Rate is sufficiently important to merit constant discussion in our columns. Second, we feel that our readers should participate in the discussion, as it is they who must do the real pioneering necessary to make Flat Rate the accepted method of merchandising service.

We hope that you will like the "Forum," and find it of real help in the application of Flat Rate to your particular problems. More than that, we want you to use the Forum. Tell us about your problems and experience. We'll help you when we can, and you in turn may be able to help some of our other readers.

STUTZ MOTOR CAR COMPANY

OF AMERICA, INC.

INDIANAPOLIS, IND., U.S.A.

Cable Address "STUTZ"

April 9, 1925.



DIRECTORS

EUGENE V. R. THAYER
 CHAS. W. SCHWAB
 HICKS A. WEATHERBEE
 WILLARD A. MITCHELL
 WALTER C. JANNEY
 ANTHONY CASSIDY
 FREDRICK E. MOSKOVICS

Mr. H. C. Hendricks,
 Hendricks-May Motor Company,
 Toledo, Ohio.

My dear Harry:

You have asked me to outline our new Stutz plans for dealers.
 Here are some of the factors in brief:

First: To put out a car at a price that a dealer can reasonably sell, of a quality that will keep it sold and please his prospect.

Second: To give him a discount which will enable him to meet all the expenses of selling, to leave him a profit and by a profit I agree with you, a dealer who can make five percent on his turnover is doing well indeed and it simply becomes a question of "How often can he turn his capital?"

Third: Give him territory enough to get sub-dealers that will enable him to keep an organization going to help him.

Fourth: A financing plan in which the factory bears a definite part of the expense and which will be fair to the dealer and not burden him with the usual usurious charges.

Fifth: A helpful spirit of cooperation which will really help; try out merchandising plans and schemes for selling and not give them to dealers as a policy until after they have been well tried out.

Sixth: Not to load a dealer unnecessarily with automobiles and, under no circumstance, to make an arbitrary allotment without consultation with the dealer, and mutual study and analysis of his territorial conditions.

Seventh: A service policy that is square and equitable.

These are a few of the fundamental factors we have adopted as guides. Following these policies means, I believe, that any dealer who joins us now will have a franchise that will be of increasing value and a business relation that will be pleasant and profitable. I will be glad to have your advice on the subject and will be glad to hear from any dealer at any time who wishes to know more of these policies or suggest any added points toward our mutual benefit.

Yours very truly,

STUTZ MOTOR CAR COMPANY OF AMERICA, INC.

F. E. Moskovich
 President.

This is a copy of a letter from our files—name and address changed. It is really addressed to YOU. Will you reply?—FREDRICK E. MOSKOVICS, President, STUTZ MOTOR CAR COMPANY of America, Inc., Indianapolis, Ind.

STUDEBAKER

STUDEBAKER eliminates middlemen's profits by building its cars complete—bodies and chassis—in Studebaker plants. This lowers the purchase price to the customer, gives Studebaker control of the quality and enlarges the sales possibilities for dealers

STANDARD SIX	SPECIAL SIX	BIG SIX
3-Pass. Duplex-Roadster . \$1125	4-Pass. Duplex-Roadster . \$1495	7-Pass. Duplex-Phaeton \$1875
5-Pass. Duplex-Phaeton . 1145	5-Pass. Duplex-Phaeton . 1495	5-Pass. Coupe . . . 2450
5-Pass. Coach 1295	4-Pass. Sport Roadster . . 1645	5-Pass. Brougham . . 2575
3-Pass. Country Club Coupe 1345	5-Pass. Coach 1695	7-Pass. Sedan 2575
5-Pass. Coupe 1445	4-Pass. Country Club Coupe 1695	7-Pass. Berline . . . 2650
5-Pass. Brougham . . . 1465	5-Pass. Brougham . . . 1795	Note: Standard Six—4-wheel brakes, 4 disc wheels . \$60 extra Special Six—4-wheel brakes, 5 disc wheels . . \$75 extra Big Six—4-wheel brakes, 5 disc wheels . . \$75 extra
5-Pass. Sedan 1545	4-Pass. Victoria 1895	
5-Pass. Berline 1600	5-Pass. Sedan 1985	
	5-Pass. Berline 2060	

Prices f. o. b. factories

THE STUDEBAKER CORPORATION OF AMERICA, SOUTH BEND, INDIANA



T H I S I S A S T U D E B A K E R Y E A R

Nash Leads the World in Motor Car Value

March Nash Sales Set New Record for Single Month's Business

Again, *for the third time* since the beginning of this contract year (September 1, 1924), the rapidly mounting demand has driven Nash sales and production to a new high point for a single month's sales and production.

October, 1924, was the first to exceed the best previous month.

Then February made past history of the October mark.

And now March sales and production have swept far above the magnificent February record.

—and reached a total practically 50% greater than March of 1924.

Such an overwhelming buying demand is nothing less than a nation's outspoken tribute to a line of cars without an equal in its price-field.

NASH

THE NASH MOTORS COMPANY
KENOSHA, WISCONSIN, U. S. A. (1571)

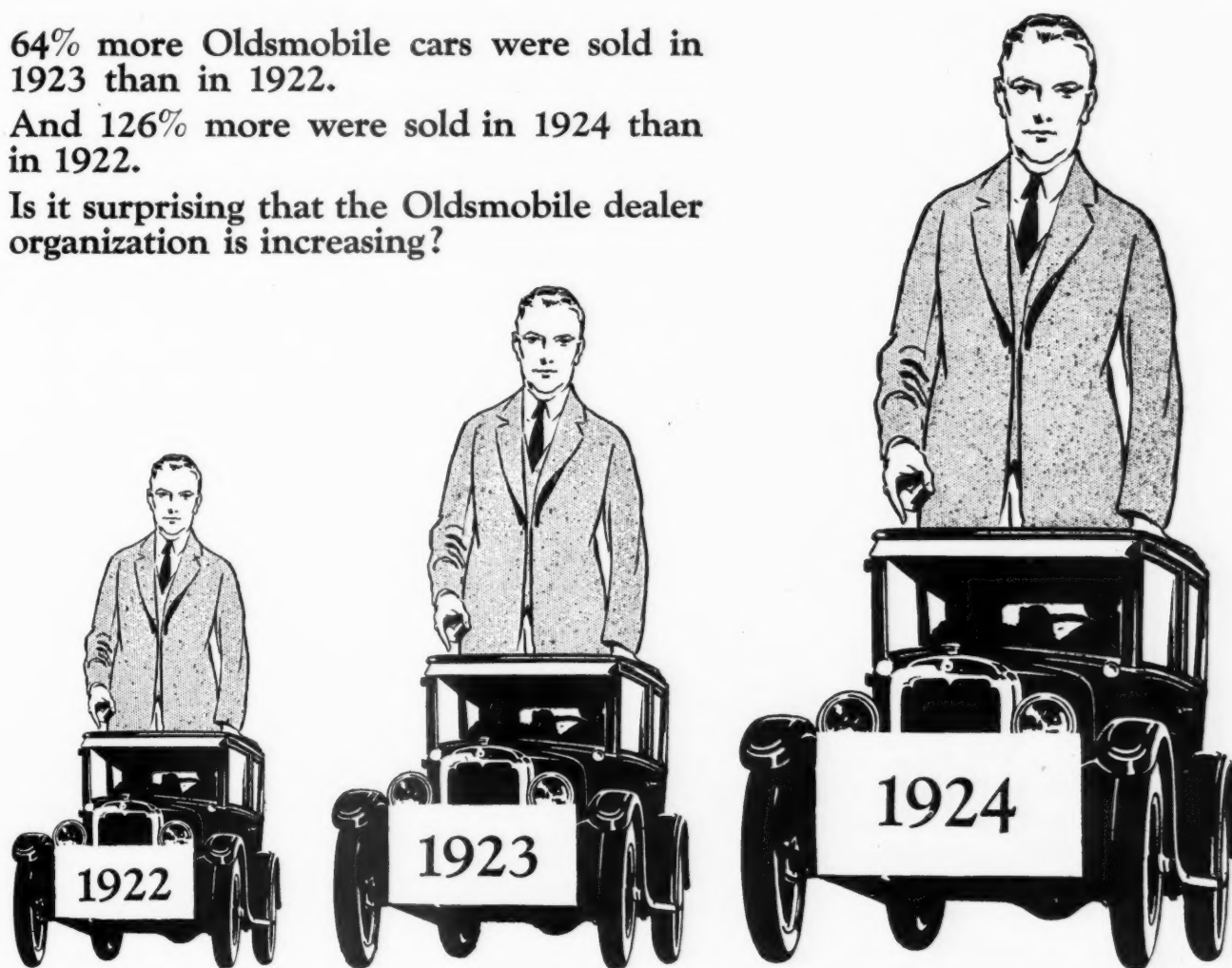
Nash Leads the World in Motor Car Value

How Oldsmobile has *Grown!*

64% more Oldsmobile cars were sold in 1923 than in 1922.

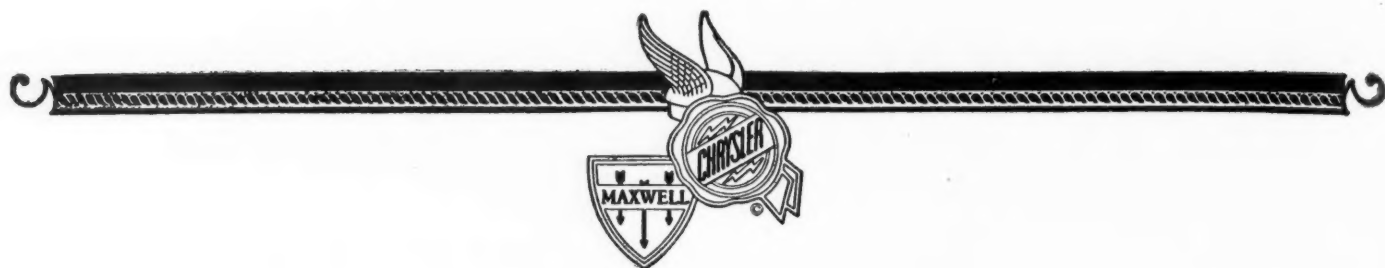
And 126% more were sold in 1924 than in 1922.

Is it surprising that the Oldsmobile dealer organization is increasing?



**1925 will show even greater growth.
Oldsmobile and General Motors offer
you a permanent, profitable dealership.**

OLDS MOTOR WORKS, LANSING, MICH.



There is money in
the Maxwell-Chrysler
franchise.

You are not doing
full justice to your-
self and your business
until you investigate.
Write for details.

All Maxwell and Chrysler dealers are in position to extend the convenience of time-payments, on a plan that is attractive to the buyer.

MAXWELL MOTOR SALES CORPORATION, DETROIT, MICH.
CHRYSLER MOTOR CORPORATION, DETROIT, MICH.
MAXWELL-CHRYSLER MOTOR CO. OF CANADA, LTD. WINDSOR, ONT.

MAXWELL-CHRYSLER

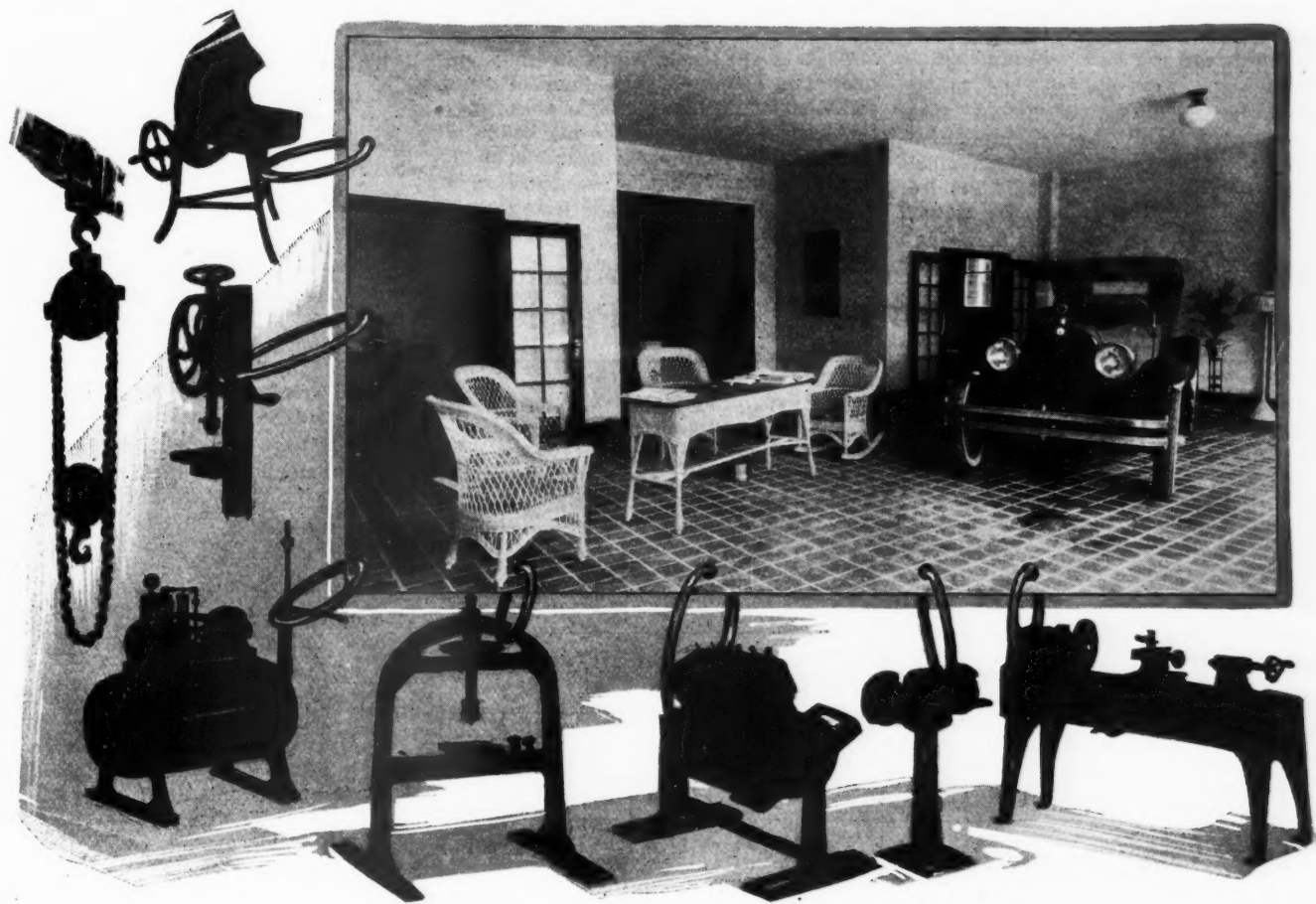
MOTOR AGE

Vol. XLVII

Chicago, April 9, 1925

No. 15

Tying Up Equipment With Sales



The salesroom alone cannot do the job—equipment must have a part in it

By B. M. IKERT

A GOOD salesroom is all right.

Having a large fine stock of parts is desirable.

Good mechanics are necessary.

But for that real dyed-in-the-wool feeling that you are coming out on top in the automotive transportation store there is nothing like having plenty of good equipment.

Almost always when you seek the reason for success of an automotive establishment, that is, one wherein automotive vehicles are sold and serviced, you find equipment in the foreground of the picture.

True, the automotive transportation store is in business to sell motor vehicles, accessories, radio and repairs of all kinds and the shop end of the business must not be stressed more than the other departments.

The name garage to most people suggests machinery and greasy mechanics, with a small cubby hole for the boss's office. Wrong. As long as most people, especially in the smaller towns, call every establishment that has something to do with automobiles a garage, we should look upon the latter as a place of business where oils, greases, monkey wrenches and khaki overalls are not the outstanding feature.

At the same time we must not overlook the merchandising possibilities of a fine line of equipment with which to adequately take care of the cars in the community.

Some automotive establishments boast in their ads about "repairs of all kinds" and "all work guaranteed" and so on, when in reality they have little or nothing with

which to do such work. Others who really have a fine line of equipment and can take care of every kind of job never let the world know about it.

We often have found pretentious looking buildings totally lacking on the inside when it comes to possessing those essential pieces of equipment which insure profitable service to the dealer and satisfactory service to the customer.

Again we have found in some alley a shop literally filled with the things to do the job right and with dispatch.

Some automotive dealers and shopmen blame makers of shop equipment to the end that such equipment is too costly.

Good Merchandising in Small Towns

The makers of equipment often blame the men in the field as being "bonehead mechanics" opposed to shop equipment. They say they have not gotten beyond the screwdriver and hammer stage.

Perhaps some of them have not, but it is not far wrong to say, we believe, that the average small town automotive dealer's shop boasts of some pretty good mechanics. These mechanics do believe in shop equipment and so does the dealer,

but if, as they say, the equipment is too expensive—what then?

We hold no brief for the dealer in the small town who makes some of his own equipment. At the same time we do not blame him in some instances.

It is well to remember that many of the present-day successful small-town dealers were at one time mechanics and know the shop end of the business well. Should we blame such dealers if during slack spells in the shop they build equipment which, while it may not be dolled up as that of the equipment dealer, does the work in question just as well?

The writer recently saw an engine stand which a shop made up in spare time and which in plain terms was just a crackerjack stand. Inquiry revealed that in the opinion of the men in this shop engine stands on the market are too expensive, and so they made one.

That is the same story in shops all over the country. The men of these establishments almost invariably agree that the equipment on the market is all right, but that the price or selling methods are against them.

Some dealers and automotive shops do

not know always just what equipment they should buy, so they might feel properly situated to take care of sales and service work in their community. In order to find out just what the equipment situation is in a certain town, MOTOR AGE recently canvassed every automotive establishment in a town of 10,000 population.

The result of this is shown in the chart. In order to better grasp the situation the reader must know that this town is situated in the northwest part of the United States and caters to considerable rural trade. It is a railroad center and excellent highways lead from it. It is the largest town for several hundred miles around and this may or may not be responsible for the seeming popularity of certain equipment such as welding outfits.

People "Hard Drivers"

Naturally the rural trade means all sorts and varieties of repairs and service work. The dealer's shop in this town does all the work from welding a broken part on a threshing machine to installing a dome light in a sedan or tuning a radio set.

Explanation is also necessary as regards the blank spaces opposite the establishments marked 10, 11, 12 and 13. These are, strictly speaking, storage garages and perform little or no repair work of any kind. One or two of them have a small battery department where batteries are charged.

The hoist was the most common piece of equipment found in the shops of this town. Paved roads are scarce in the community. Motor vehicles consequently collect much dirt and mud underneath and aside from the better operation conditions induced by a hoist, there is more reason than ever for elevating cars and trucks to clean them before tackling a job.

People in this community also are "hard drivers." Distances are vast and cars travel many miles without a stop. Periodic inspections are not common and the result is people drive their cars until such a time when major service and repair operations are necessary. Thus there is much "overhauling" and this means removing units as axles, engines, transmissions, etc., which calls for a hoist.

The majority of these hoists are home-made in the sense that a wood framework is built from four-by-fours and a conventional chain falls suspended therefrom. Also in some of the establishments the chain falls is hung on an overhead track.

Power grinders and air compressors come next, the fourteen automotive establishments boasting a total of ten each. The four concerns which do not have an air compressor are the storage garages, where of all places one would expect to find air service.

The ten grinders are easy to understand. No shop of any kind can get along without a power grinder and buffing machine. The complete uses of a grinder is a story in itself.

The analysis of the equipment in this

Chart Showing Equipment of Fourteen Automotive Shops in a Town of Ten Thousand People

Shop	Lathe	Drill Press	Power Grinder	Arbor Press	Air Compressor	Welding Outfit	Cylinder Tool	Hoist	Engine Stand
1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
3	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes
4	No	Yes (Elect.)	Yes	No	Yes	Yes	Yes	Yes (2)	Yes
5	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No
6	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
7	No	Yes (Elect.)	Yes	No	Yes	Yes	No	Yes (2)	Yes
8	Yes	Yes (Elect.)	Yes	No	Yes	Yes	Yes	Yes	Yes
9	No	Yes (Elect.)	Yes	No	Yes	No	Yes	No	No
10	No	No	No	No	No	No	No	No	No
11	No	No	No	No	No	No	No	No	No
12	No	No	No	No	No	No	No	No	No
13	No	No	No	No	No	No	No	No	No
14	No	Yes (Elect.)	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The above chart does not show all the equipment used by these concerns. Additional equipment hard to classify is mentioned in the text.



Welding the cylinder block saved the car owner considerable money in this case. How it was done is told in the story

town showed seven of the fourteen shops have a welding outfit. Remember that we said the automotive shops in this community work on all kinds of motor vehicles and machinery. Then you will appreciate the why of all the welding outfits.

It gets mighty cold in this town and there are plenty of cracked water jackets. Most car owners do not care to buy a new block under such conditions and so—welding is the remedy. What these shops often accomplish by welding is shown by the following example:

A car owner allowed the water in the engine jacket and radiator to freeze and the block broke as shown in the illustration. The block also was cracked around the spark plug openings. The cracks were first cut into a V shape with a diamond point chisel and the block placed on fire bricks upon the ground, to elevate it slightly. Fire brick was placed around the block, leaving a space of about two inches all around. A slow charcoal fire was then started and when the block had become a dull red the welding torch was applied to the broken parts and cracks.

After welding, charcoal was applied further and the whole buried in dry cinders to prevent too rapid cooling by air, a procedure likely to crack the block. When cool the welded portions were dressed smooth with an emery wheel and the block painted with engine paint. The block was fully as good as new and here is what the books showed:

½ hr. chiseling @ \$1.50.....	.75
2 hrs. preheating @ \$1.50.....	3.00
1 hr. welding @ \$1.50.....	1.50
6 packs charcoal @ .25.....	1.50
20 cu. ft. air @ \$1.85.....	.37
12 cu. ft. acetylene @ \$3.75.....	.45
Grinding and painting.....	1.00
	\$8.57

List price, new block.....\$40.00
Received for job.....12.00

Saving to customer.....\$28.00

Received for job.....\$12.00
Shop costs.....8.57

Net profit.....\$3.43

There is a noticeable absence of adequate equipment for doing cylinder work. Seven of the shops have some form of

tool for reconditioning cylinder bores and in the main these are hones, there being four. One shop has a reboring tool, but makes little use of it, the shop foreman explaining that it took too long to set the machine up. Besides, there is a machine shop in the town which has an internal grinder and it is quicker and better sometimes for most of the shops in the town to send their work there.

A checking-up of this machine shop shows nearly all the dealers in the town bank on it for such major operations as cylinder regrinding or reboring. The machine-tool equipment of this machine is so complete it can handle almost every kind of conceivable job, even for the largest tractor.

Six Engine Stands

Incidentally, the presence of this shop may account largely for the absence of certain equipment from the dealers' shops. Every one of the latter shops is not more than five minutes away from the machine shop and so many of the dealers look upon the latter as almost a part of their own establishments.

Engine stands. Six were counted and of these four are home-made affairs. One shop has a stand but does not use it, stating that too much time is required in getting engines in and out. And so their engine stand now is a wood trestle mounted on casters.

As indicated on the chart, five shops have a lathe. Where many parts have to be reconditioned or new ones made, as in this section of the country, the lathe is a most useful machine tool.

There are five drill presses in the town, aside from those in the community machine shop. But also five of the shops have electric drills mounted in a bench stand which, practically speaking, constitutes a drill press. So in reality ten shops are well equipped when it comes to their drilling apparatus. The four establishments not so equipped are the storage garages which do no repairing, so the drill presses bat 100 per cent.

Arbor presses did not make as good a showing as one might expect of such a useful piece of equipment. The count showed five arbor presses. There is a good chance for someone to sell five more, because the shops thus lacking sooner or later must come to them.

The chart does not show all the equipment these dealer shops and garages have. Some of this equipment is difficult to list, but in order to give a complete picture of the maintenance facilities these establishments have the following must be added:

Concern 2 also has a milling machine, shaper, power hacksaw and a tire press for handling the largest type truck tires.

Concern 3 has a complete blacksmithing outfit, including a power hammer.

Concern 6 also has a complete blacksmithing outfit.

Concern 8 has complete equipment for starter, generator, ignition and battery work.

Concern 12 (a storage garage) has full equipment for battery changing.

What Machine Shop Has

By this time the reader may be anxious to know what the machine shop of this town has in the way of equipment and which makes possible the excellent service and maintenance on motor vehicles in this community. Here is what the machine shop has:

One 28 in. by 14 ft. Barnes lathe.

One 18 in. by 10 ft. South Bend lathe.

One 14 in. by 6 ft. Carrol-Jamison lathe.

One 21 in. by 10 ft. Le Blonde lathe.

One Le Blonde universal milling machine.

One No. 55 Heald internal grinder.

One 6 by 32 Norton universal grinder.

One Marvel reboring machine.

One 30 by 30 by 10 ft. American planer.

One arbor press.

One large drill press.

One sensitive drill press.

One welding outfit.

In addition to the above the shop, of course, has a full line of reamers of every type, etc.

One of the outstanding things in making this shop equipment analysis was the notable lack of main bearing and connecting rod bearing tools. Not a shop has an align reamer for main bearings, nor has it a fixture for pouring bearings in the big end of rods.

How Originality, Advertising and Vigorous Merchandising Built Up a **\$250,000 Business**



Left—Richard B. Loynes, owner of Loynes Garage and proprietor of "Smiling Dan the Service Man" who has become famous around Long Beach, Cal., as an advertising character. Right—Entrance view of Loynes Garage, showing arrangement of gas and oil pumps and air and water stand in center of arcade

BY intensively developing all opportunities to profitably serve the needs of the customer, the Loynes Garage of Long Beach, Cal., has built up a \$250,000-a-year business in less than two years' time. Loynes Garage is an automotive institution that makes substantial net profits because it has a complete automotive merchandising organization, with vigorous merchandising policies.

Every department in the Long Beach establishment, which covers more than 80,000 square feet in its three floors and full basement, is directly operated by the garage. No space is leased, as is the practice in some garages. On the left side of the spacious arcade in the front of the building is the battery and electrical repair department, housed in a space 18x45 feet. Two men are employed here, a battery man and an electrician. On the right side of the arcade, in a similar space, is the tire and tire repair department. There is one tire salesman and a tire repair man. In the center of the arcade are two gasoline pumps and the oil stands. The accessory store, with display windows facing the driveways, is located immediately back from the pumps. The liberal use of signs distributed about the driveways calls attention to the repair shop, and the washing and greasing racks.

Effective Department Arrangement

"We have endeavored to sell our entire institution's facilities right in the arcade by means of efficient arrangement of our departments, by displays and appropriate signs," explains P. R. Loynes, sole proprietor of the business. "We felt that for a garage to develop a really substantial volume of business in batteries, accessories and tires, these items must be directly sold from locations that were not only easily accessible to

the customer, but were in plain view. We have tried to make the most of our driveways and arcade in the way of bringing all our facilities and our merchandise to the attention of all customers."

Loynes Garage has a storage capacity of 500 cars and its stalls are well occupied through all seasons. The company's head is a firm believer in advertising and consistently expends five per cent of his gross receipts in advertising promotion. He features in all his advertising a trade character known as "Smiling Dan," which has become one of the most widely known trademarks used by any automotive institution in Southern California. "Smiling Dan," the trade character, is shown garbed in khaki suit, with leather puttees, and a blue service cap similar in shape to those worn by American overseas soldiers.

Employees Dress "In Tune"

In order that all employees at the garage who come in contact with the public may reflect the spirit of the trade character, they are all clad in khaki, puttees and blue service caps. These outfits are furnished by the garage company to the employees, but the latter are required to pay one-half the cost of their upkeep, such as polishing puttees, pressing and cleaning suits, etc. The distinctive uniforms worn by the Loynes employees are considered excellent advertising for this institution, because they tie up so effectively with the extensively advertised trade character.

Loynes has built up the business for the repair shop in his garage to a point where a force of ten mechanics are now required to handle the work. All mechanics are on the day shift. A trouble shooter affords the only mechanical service

at night. The shop in the Loynes Garage is located on the second floor, rather than on the top floor, as is usually the case.

"We find that by having our shop on the second floor we have economized greatly in the time consumed in bringing cars to and from the repair department," explains Mr. Loynes. "Our rates for the upper floors are \$8 a month straight so that the space on the second floor is not any more valuable than the third floor space. We charge \$7 a month for storage in the basement and \$10 on the main floor."

All storage customers deliver their cars to attendants at the entrance who drive them to their respective stalls.

The Loynes Garage maintains two completely equipped tow cars, and advertises 24-hour tow service. The tow cars have been made to yield handsome profits. Loynes has arrangements with various agencies of information to send in prompt tips on any automobile accidents and the garage sends a tow car to the scene of all mishaps. Being the first tow car on the scene, Loynes invariably brings in the wrecks. Once in his establishment, he generally gets the order for repairing the damaged cars. Also, most wrecks require new tires, and he supplies these.

Advertises Towing Service

Loynes features his tow-car service in most of his newspaper and other advertising. He also makes use of direct-by-mail material to advertise this phase of his business. Typical of the letters sent out on tow-car service are the following:

Picture your car purring along smoothly on the open highway. Another car comes careening around the turn just ahead. You jam on the brakes—too late! Crash! A sickening lunge and roll into the ditch. Your car is a wreck!

Perhaps this has never happened to you—perhaps it never will—but in the event it does—and there is a great possibility it will—KEEP COOL! Get the name and address of the driver who hit you and the make and license number of his car. Get the names and addresses of all eye witnesses. This is of prime importance in



Storage room on main floor of Loynes Garage

winning your suit for damages or fighting the case should the other party sue.

After you've attended to the above mentioned, THEN phone for Loynes Garage tow car. You'll be astonished at the time we make in reaching you, and you'll be further astonished at the sight of your car when it comes from our repair department, as good as new with every vestige of the wreck removed.

The tire department has been developed into one of the most profitable branches of the business at the Loynes Garage. And most of the tire business is obtained from the garage storage customers.

Check Tires of Stored Cars

"Our tire department keeps a close check on the condition of the tires on all the cars in our storage stalls," says Mr. Loynes. "Here we have a prospect field of between 450 and 500 owners that we can watch and cultivate. By our system of checking tires, we know when a certain customer needs tires and we see to it that our tire department furnishes them."

Once a month every month of the year all employees of the Loynes Garage sit down at a dinner as guests of their boss. After dinner is over an open forum is conducted for the discussion of subjects centering around the betterment of service. Mr. Loynes is a firm believer in these meetings as a means of getting the men in the organization together, thus affording opportunity for interchange of ideas.

FROM—
243 Chestnut Avenue
LONG BEACH, CALIF.

for Attention of

TOW CAR Service

DAY AND NIGHT
Whether the engine troubles or a flat tire, a "Smiling Dan" will bring you to the garage.

Is YOUR BATTERY DEAD?
Let "Smiling Dan" bring it to life.
Loynes Garage
Phone 652-76 Chestnut at Third

EVERY NEED FOR THE MOTORIST UNDER ONE ROOF!

OUR SMILING DANS ARE ALL SKILLFUL EXPERTS
LOYNES GARAGE SERVICE MEANS COMPLETE SATISFACTION

Open Day and Night
Storage for 500 Cars
Repair Service

Loynes Garage
Phone 652-76 Chestnut at Third

Tow Car Service
United States Tires
Accessories

Specimens of Loynes advertising in which the garage features "Smiling Dan the Service Man"

Ownership of Dodge Brothers, Inc., Passes to New Hands

DETROIT, April 3.—The following statement by General Motors Corporation relative to its bid on the Dodge Brothers property, was issued today:

"In response to inquiries General Motors Corporation states that at the invitation of the trustees of the estate of John F. and Horace E. Dodge, deceased, it submitted a sealed bid for the properties of Dodge Brothers, through its bankers, J. P. Morgan & Co. of New York, and has been advised that the property has been sold to Dillon, Read & Co. on a higher bid.

"General Motors Corporation submitted two bids, as follows: First, an all-cash bid of \$124,650,000 net; and, second, a bid involving a cash payment of \$59,000,000 net, plus \$90,000,000 of non-interest bearing installment notes maturing in equal series over a period of nine years.

"The present worth of these non-interest bearing installment notes was approximately \$65,500,000. This, with the \$59,000,000 cash plus payment, shows the present worth or paper cash value of this bid to be \$124,500,000 or substantially the same as the other bid."

Detroit, April 4.

ONLY the signing of the purchase contracts remains to conclude formally the passing of Dodge Brothers, Inc., from the hands of one family to new corporate ownership.

To the industry at large this is the only change that results from the sale this week, as the purchasers have declared their intention of operating the property as before. Word to this effect has been wired to the Dodge Brothers dealer organization over the signature of President F. J. Haynes.

The property will not be merged with any other nor has it been purchased for resale to any other corporation now in the industry.

This is the word of Dillon, Read & Co., which headed the banking syndicate making the purchase.

The purchase price, which is now unofficially stated to approximate \$150,000,000, would indicate the retention of the property by the buyers. Public offering of stock and securities under the new ownership is expected within the immediate future.

No Interference by Change

The changeover from the hands of the Dodge estates to the new ownership will be accomplished without the slightest interference with the operation or general functioning of the plant and its management. Going into April the plant was building approximately 1,100 cars daily—capacity production. Throughout the period of negotiation for the sale there was no variation from the routine of administration nor will there be any now.

In his statement to dealers, Mr. Haynes said:

"Dillon, Read & Co. have arranged to purchase Dodge Brothers, Inc. The new owners have assured the management that the business will be continued and conducted as an independent corporation and that any rumors of consolidation with other companies are unfounded.

"The policy, standards and ideals of the present organization are recognized and approved, and there is no intention of changing them. The present management and organization will remain as they are."

Official confirmation of the sale was contained in this statement by Dillon, Read representatives:

"An agreement has been reached for the sale of Dodge

Brothers, Inc., to Dillon, Read & Co., and contracts of purchase are now being drawn.

"Consolidation of Dodge with any other company or companies is not in contemplation by the purchaser, and current rumors of consolidation are entirely without foundation.

"It is the intention that Dodge Brothers, Inc., shall continue to be conducted as an independent concern without change in policy or personnel of management."

Peak Year for Sales

The Dodge interests were represented in the final negotiation of the sale by John Ballantyne, treasurer of Dodge Brothers; Wesson Seyburn, and Charles P. Spicer, vice-president of Detroit Trust Co. This latter institution and Mr. Ballantyne are co-trustees in the Dodge estates with Mrs. John F. and Mrs. Horace E. Dodge, widows of the founders. The Dillon, Read representatives were E. G. Wilmer, chairman of the board of Goodyear Tire & Rubber Co.; A. C. Schwartz, and S. W. Howland. Mr. Wilmer is expected to become chairman of the board of the new company.

Though no statement has been made as to the reasons for selling, it is pointed out that the company has just come through its peak year with sales of \$191,652,446 and profits approximated at \$17,500,000. There is every indication that the business will be equally profitable and probably increasingly so in the future. This earning record and outlook make it possible to realize a maximum sales price at this time, and this, coupled with the desire of the Dodge families to be relieved of the responsibility of

continued ownership, is believed to have led to the sale.

Those who will share in the proceeds of the sale are Mrs. Mathilda R. Dodge, widow of John F. Dodge, and children—Mrs. Winifred Dodge Gray (now Mrs. Wesson Seyburn); Isabelle Cleves Dodge (now Mrs. George Sloane of New York); Frances Mathilda Dodge, Daniel George Dodge and Anna Margaret Dodge; Mrs. Anna Thomson Dodge, widow of Horace E. Dodge, and children, Horace E. Dodge, Jr., and Mrs. Delphine D. Cromwell of Philadelphia.

John F. Dodge left the income from his estate to his widow and children. The bulk of the Horace E. Dodge estate went to his widow to be shared equally by the two children upon her death.

ROMANTIC BUSINESS DEVELOPMENT

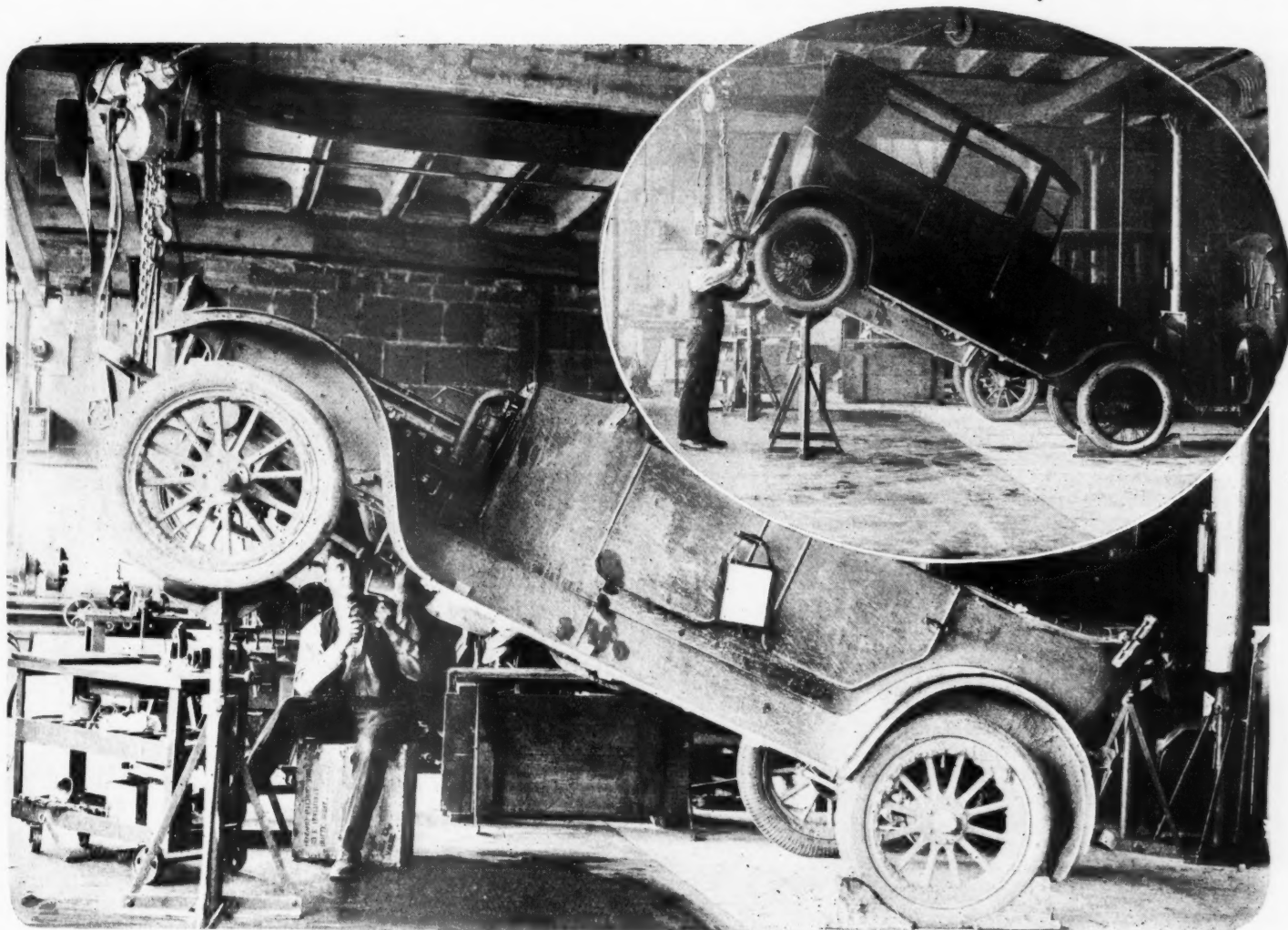
THE rise of the Dodge Brothers as manufacturers and the development of the great business bearing their name offers material for a most gripping story.

Since 1902 when the two Dodge brothers, then occupying a small machine shop in Detroit, entered the automobile field, their company has grown from an investment of a few thousand to the present \$150,000,000 structure.

Meeting indifferent success in bicycle building in Canada the brothers came to Detroit to found a machine shop which by stages expanded to the manufacture of automobile parts, then manufacturing engines for the Ford Motor Company and finally to the manufacture of their own cars.

Their first contract in the automobile field was to build 3,000 sets of transmissions for the Olds Motor Company, in 1902. Shortly thereafter they began manufacture of parts for Ford and assisted in development of the Ford engine. They continued making parts for Ford until 1914 when the first Dodge Brothers cars were built. They sold their interest in the Ford company in 1920 for \$27,000,000.

Light and Convenience Help Cut Overhead



AFTER reading an article in *MOTOR AGE* making a plea for better working conditions in the shop, a reader sends in the above pictures taken in his shop. The shop is that of Howard Pierce, Inc., Butte, Mont. He is a dealer in Pierce Arrow cars and trucks and Franklin cars.

The lower view shows the mechanic

working under a car on a bearing job. Note the adjustable stands, removable bench for tools and the hoist. Mr. Pierce states that practically half the time on a job is saved by the great amount of light and the added convenience.

In the oval is shown the use of the travelling electric crane in connection with rear axle or rear spring work. In-

cidentally, this shop floor is covered with battleship linoleum, a great help to the men who previously worked on a concrete surface. Linoleum also lessens the damage to tools and parts. These pictures were taken at 4:30 P. M. without artificial light, so the reader easily can form an idea of the excellent lighting of the shop.

Methods of Compensation

"Methods of Compensation" is the title of No. 1 of a series of pamphlets being issued to group policyholders of the Metropolitan Life Insurance Co. The data contained in the pamphlet of 16 pages contains much condensed and terse information. In it are set forth various methods of compensation, giving their respective advantages and possible disadvantage. A section is devoted to the bonus system wherein are enumerated the various kinds of bonuses paid. As an outgrowth of the compensation methods discussed the leaflet suggests the point system of determining the proper method of compensation for the various establishments, and then sets forth a summary

of several systems in successful use by respective companies.

The Policyholders' Bureau of the Metropolitan Life Insurance Company will shortly have available for distribution three additional publications dealing with methods of compensation. The first of these will be an "Analysis of Branch Manager's Contracts," the second "Methods of Compensating Retail Clerks," and the third "Methods of Paying Factory Workers."

RE-ELECT CHANDLER BOARD

CLEVELAND, April 3.—Directors of the Chandler Motor Car Co. were re-elected at the annual meeting. F. C. Chandler, president, said that business gained materially in the latter part of February, after a period of slump.

25 Years of Transportation

The White Company, Cleveland, has just issued an attractive silver anniversary edition of its transportation magazine, *The Albatross*, featuring a quarter century of White transportation. As the company is one of the pioneers in the development of motor transportation, the book, in a large way is a history of the automotive industry. It contains a vast amount of information and reviews in an entertaining way the progress made by this well known truck and bus manufacturer from 1900, when the first White truck was built, to the present. The book is being sent free to all persons interested in motor transportation who write The White Co., Cleveland.

Cadillac Company Has Evolved Special Tools to Facilitate Maintenance Operations

AN important contributing factor in the economical operation of a car is an assortment of specially designed tools for maintenance operations which have been developed by the technical department of the Cadillac Motor Car Company during the past eleven years. Some of these devices have reduced time charges on individual operations to one-fourth and even to one-tenth of what they would be without the special tools.

There are 118 of these devices which are standard equipment in Cadillac maintenance stations. Each has been developed and supplied to distributors and dealers throughout the country for two main purposes—either that a particular operation may be performed with the same accuracy as is used in Cadillac manufacturing, or to reduce the time required for a single operation.

Have Crankshaft Retruing Tool

In the parts department of the Cadillac company all of these tools which have been designed to date for use on Cadillacs are mounted for easy reference on a huge display board. The space covered is 16½ ft. long and 8 ft. high.

One particularly interesting tool is a crankshaft retruing tool which consists of three parts—a rigid bracket to be clamped under the main bearing cap bolts; a hinged tool-holder with feed screws, and a cutting tool.

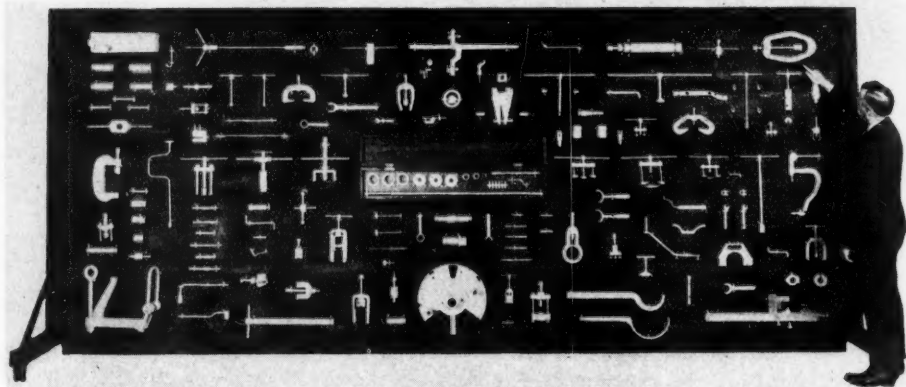
A line reamer for main bearings makes it possible to ream the bearings in alignment the same as it is done in the manufacturing process.

Much like a surveyor's transit is a tool for checking the alignment of rear axle sleeves without removing the rear axle. It includes a set of cross-hair sights to be placed on the ends of the axle sleeves after removing the wheels. The straightening tool consists of a steel casting with forged steel eyebolt and links to attach it to the rear axle without removing the axle from the car.

There are five tools involving the use of dial indicators—one indicating the clearance in the main bearings; one indicating the clearance in the bearings at the lower ends of the straight connecting rods; one for checking the alignment of connecting rods; one for measuring the cylinder bore diameters, and one for showing backlash between rear axle gear and pinion.

Have 29 Special Wrenches

Among the greatest time-saving devices are pullers for dismantling operations. There are thirty of them, such as a steering wheel puller, a crankshaft sprocket and spiral gear puller and a camshaft sprocket puller. Pushers are also supplied for many operations in the installation of parts. One of the largest



The huge display board in the Cadillac factory which shows the maintenance tools developed by the company up to the present time

tools is one for making brake adjustments when wheels are removed. It is a cut-open drum used in truing up the brake bands and it can be used to make a complete adjustment without the wheels being in place.

While it is not the policy of the company to supply tools which can readily be obtained on the open market, for time saving in operations 29 special wrenches have been devised and some reamers are also supplied for specific purposes.

25 Years Ago In the Automobile Industry As Recorded In MOTOR AGE

(From MOTOR AGE of April 12, 1900)

Automobile Transportation in Washington

WASHINGTON, D. C., April 6.—With automobiles of every description flitting about the streets, the national capital is taking on the appearance of a metropolitan city. The local public has taken very kindly to the new mode of locomotion and the patronage of the several companies operating automobile services is increasing every week. The congressional contingent is much interested in the possibilities of the automobile and a number of prominent statesmen have expressed the opinion that it is destined to revolutionize the present methods of living and methods of travel.

Astor's Stage Line

NEW YORK, April 8.—John Jacob Astor has organized an electric automobile omnibus service between Rhinecliff and Rhinebeck, which will be put into operation as soon as the hill at the Rhinecliff station is removed, contract for which has been awarded. This service will connect Rhinebeck with the New York Central railroad.

Technical Committee Appointed

NEW YORK, April 8.—The Automobile Club of America has appointed the following technical committee, to whom all questions regarding expert handling will be referred: C. J. Field, chairman; Prof. R. H. Thurston, Cornell University; Prof. Elisha Thompson, Swampscott, Mass.; T. Cumerford Martin, editor of Electrical

World; Alexander Fischer, Dr. S. S. Wheeler and Carleton May.

A Philadelphia Automobile Club

PHILADELPHIA, April 9.—On Wednesday night last, at the Hotel Flanders, the initial steps were taken looking toward the formation of the Automobile Club of Philadelphia. Fourteen gentlemen, prominent in local business and social circles, were present.

En Route to the Klondike

According to dispatches from Vancouver, B. C., E. Jaune de Lamare, Ralph Merville and S. Crom, who are going to attempt to reach Dawson City by means of an automobile, in the manner described in MOTOR AGE some weeks ago, have left by steamer for the Klondike. They have a 5-h.p. automobile, a 3-h.p. cycle and a tandem. Under favorable circumstances, with moderate weather and good ice, they think they can make the 600 miles between the railway terminus and the Klondike capital in 30 days. They will use gasoline as fuel.

Good Roads Banquet

NEW YORK, April 8.—Last Monday night at the Waldorf-Astoria the Automobile Club of America entertained at a banquet Gen. Nelson A. Miles and his fellow members of the volunteer commission on the feasibility and desirability of a national highway from the Atlantic to the Pacific.

Studebaker Has Three New Body Models

THREE new Studebaker body types entered production early in April.

The three new models are:

The Big Six five-passenger, four-door brougham. Price \$2,575, f. o. b. factory.

The Special Six Coach. Price \$1,695.

The Special Six four-passenger country club coupe. Price \$1,695.

Walnut-Finished Door Panels

The Big Six Brougham is close-coupled, upholstered in a taupe shade, with blue stripe effect and headlinings to match. The lower part of the body is finished in royal Studebaker blue lacquer while the top is in black lacquer, with a belt molding in black with ivory striping. It carries front and rear bumpers and a steel trunk. It is fitted with snubbers, motometer with winged radiator cap, combination stop-and-tail light, an extra tire, tube and tire cover, protected by a thief-proof lock.

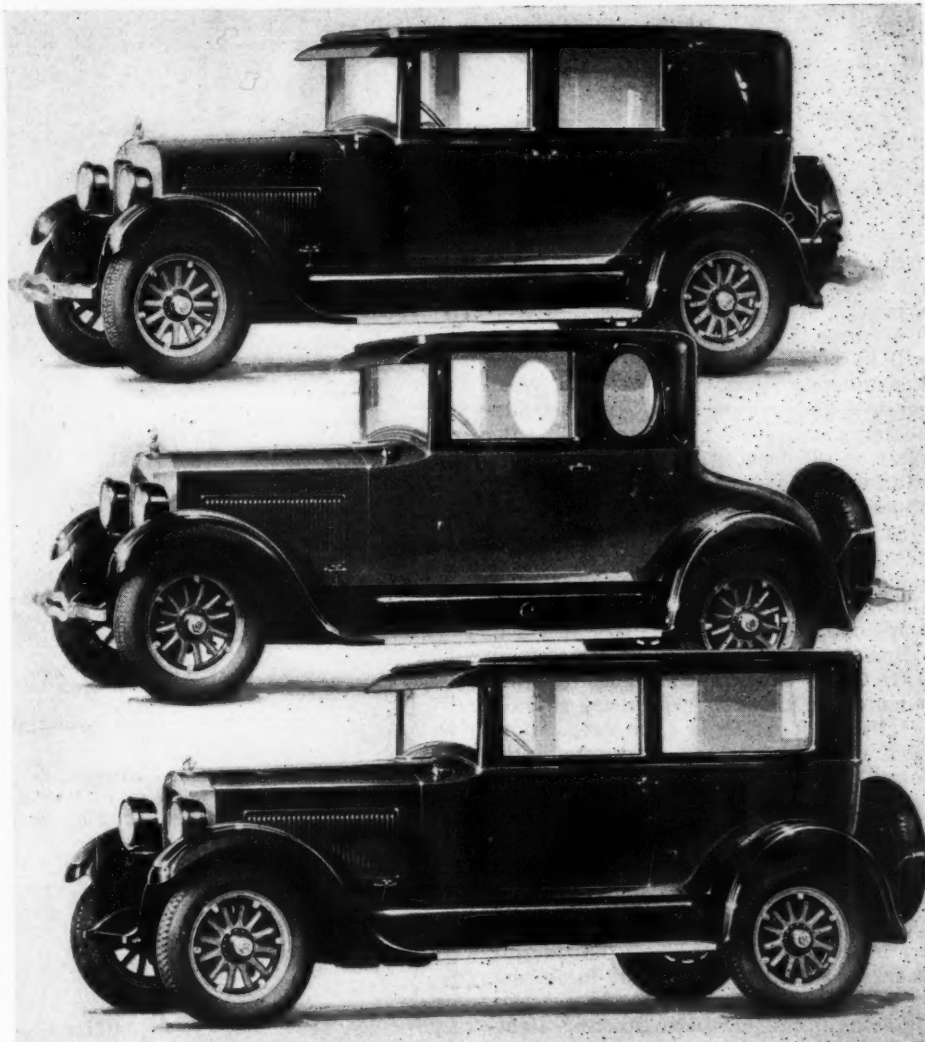
Appointments within include walnut-finished door panels, with walnut garnish molding on the sills of the door windows in harmony with the instrument board. An automatic windshield cleaner, rear-view mirror and fully ventilated one-piece windshield afford a clear vision. The instrument board carries an inspection lamp with extension cord and an owner's monogram plate. Interior hardware is in butler silver. Door-window raisers are crank-type, and a silken toggle grip, as an extra support for exit from the car, is provided.

Special Six in Wyandotte Green

The Special Six Coach is finished in Wyandotte green. The top is finished in black lacquer and is full-paneled in steel. Upholstery is in brown Velmo with headlining to match. Garnish molding is of Velmo except the window sills, which are of walnut-finish. The windshield is one-piece, with automatic cleaner and rear-view mirror, and outside is a hooded sun visor.

Rated a four-passenger vehicle, the new Special Six country club coupe accommodates five passengers through use of a cleverly arranged rumble seat which will carry passengers in comfort. Equipment includes a regular Special Six closed car motometer with winged radiator cap; a combination stop-and-tail light mounted on a steel apron which protects the gasoline tank at the rear; automatic windshield cleaner and rear-view mirror. A wide and deep package compartment, with space on top for golf bags is back of the seat.

The rumble seat is finished in Spanish grained, chrome tanned black leather. Upholstery is of mohair in a walnut shade.



Three new Studebaker body models. Top—Big Six brougham. Center—Special Six 4-pass. country club coupe. Bottom—Special Six coach

Vitralite Automobile Enamel Uses Two Materials for Ordinary Job

PRATT & LAMBERT, Inc., varnish makers for many years, undertook some time ago to develop a line of colored enamels for automobile finishing which would have the same ease of application and wearing qualities of its black enamel which for many years has been used by paint shops on fenders, hoods and upper decks of closed cars.

The result is a product known as Vitralite Automobile Enamel, an oil enamel, new only in its application to automobile requirements. Oil enamels have been used heretofore in many other fields.

The Vitralite Automobile Enamel system consists of one coat of Primer-Sealer and two coats of Enamel, with the use of glazing putty and surfacer optional and depending upon the condition of the metal.

This system is simple—requiring only two materials for an ordinary job, and

these applied by brush unless spray is preferred. A complete job can be turned out in 6 to 8 days. It is satisfactory as to both appearance and durability, it is stated, and dries with full body and such a high gloss that at times it is taken for varnish finish. The first cars finished with this system are still in good condition after about 2 years of service, and it is conservative to say that the durability compares quite favorably with lacquer enamel, according to the company.

Vitralite Primer-Sealer is furnished in two colors only, Light (Gray) and Dark (Red). The enamel is made in eighteen colors, including black and white. Practically any shade can be secured by mixing two or more colors.

The schedule recommended for bringing up a job from the bare metal is as follows:

One-coat Vitralite Automobile Primer-
(Continued on next page)

Kleiber Car Pacific Coast Custom-Built Product

PRODUCTION has been going on for several months on the new Kleiber car, built by the Kleiber Automobile factory, San Francisco. This company, which has been manufacturing the Kleiber truck for many years only recently launched in the passenger car field with the intention of selling a custom-built car at not more than \$2,500. At present the cars are selling under this price, the phaeton selling for \$2,150 and the four-door sedan for \$2,350. Both prices are f. o. b. factory.

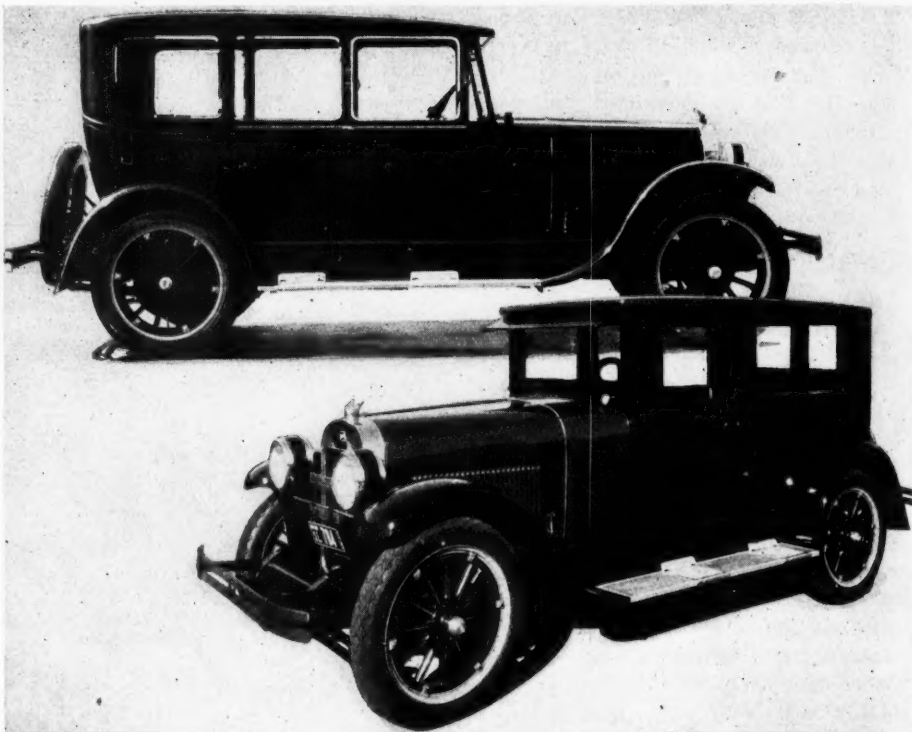
According to the company no effort will be made to sell the car outside the Pacific coast until such a time when service and maintenance can be adequately rendered in other states than the three on the coast. Also no yearly models will be produced, particularly in external appearance, body construction and finish.

At present four models are made, the five-passenger sport touring, at \$1,885; same, with California top as mentioned above; two-door coach, at \$2,150, and the four-door sedan at \$2,350.

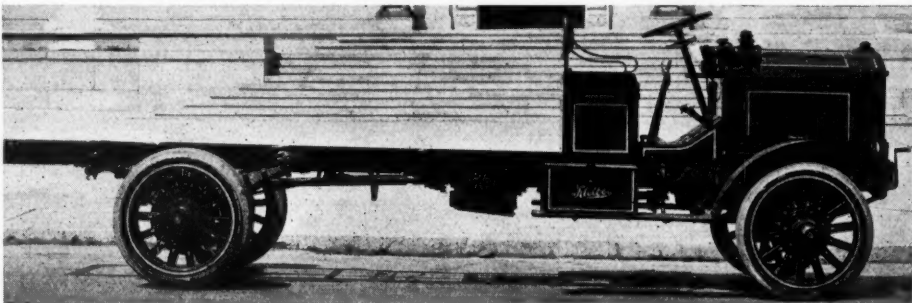
Bodies are built by the Fisher-Gaffney Body Co. of San Francisco and these are mounted on a 122-in. wheelbase chassis, the frame of which is 6 in. deep. Both front and rear springs are semi-elliptic, being 38 by 2 in. and 52 by 2 in. respectively. All springs are chrome vanadium steel.

The mechanical units of the car include a Continental six-cylinder 3½ by 4½ in. engine driving a Brown-Lipe dry disk clutch and gearset. Timken axles are used, front and rear and the steering gear is a Ross with an 18-in. wheel. Universal joints are of Spicer make. Other units include Delco starting, lighting and ignition; Rayfield or Stromberg carbureter; Prest-O-Lite battery; cord tires, 4½ in. (balloons if wanted) and drum type head lamps. An 18-gal. fuel tank is placed at the rear, with fuel fed by a vacuum system.

Upholstery is in Spanish leather, with mohair and velour trimming. Duco finish is used.



Above—Kleiber phaeton, California top, combination sliding windows, price, fully equipped, \$2,150, tax extra f. o. b. San Francisco. Below—The Kleiber four-door sedan, price \$2,350, tax extra f. o. b. San Francisco



Stock chassis of the Kleiber truck, ranging in size from 1 to 6 tons, and in price from \$2,600 to \$5,300, f. o. b. San Francisco

New Oil Enamel Brought Out

(Continued from page 17)

Sealer of proper shade. Allow to dry over night. Sand lightly.

Two-coats Vitralite Automobile Enamel, selected color. Allow first coat to dry 48 hours and lightly wet sand with waterproof sandpaper and water. Do not expect Vitralite Automobile Enamel to harden like color varnish, as it is not designed for rubbing.

Note (a) When necessary, spot putty over the primer-sealer, using a putty or about the same color as the enamel.

Note (b) While surfacer is not required for many jobs, it may be used when the metal is rough or an especially smooth finish is desired.

Note (c) A small amount of Pratt &

Lambert's One Day Auto Rubbing Varnish may be mixed with the first coat of enamel, if the painter wishes to hasten the hardening.

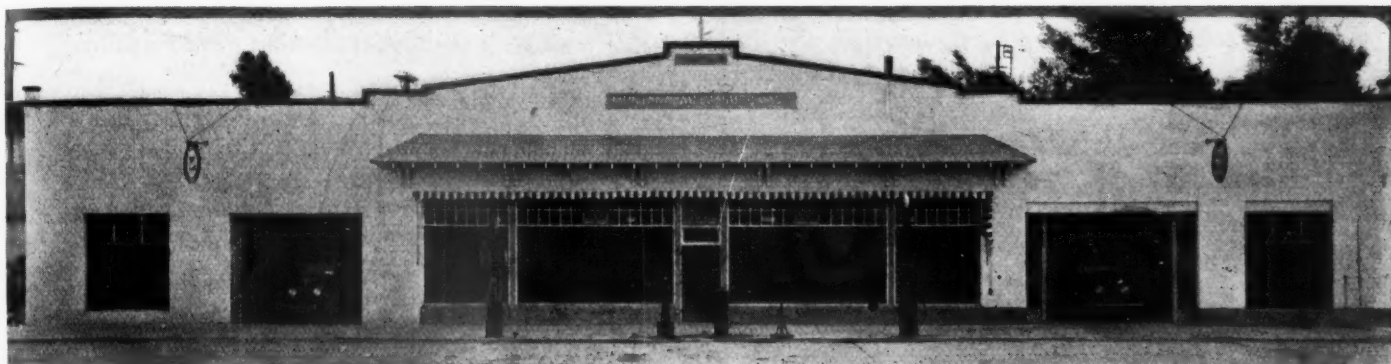
The experience of a large number of custom shops with this oil enamel system has brought out a number of features that make it peculiarly adapted to their particular requirements. No special equipment is involved, as in the case of lacquer, and it is unnecessary to teach the finishers their trade all over again, the company states. Although the finish obtained has a good body and gloss the cost of producing it is considerably lower than some other forms of finishes. Since this finish combines so many of the desirable qualities of varnish and lacquer,

it is especially advantageous for the small shop that cannot very well work with more than one system. For the larger shops it works out well, either used exclusively or in combination with one of the other systems.

SAN ANTONIO FORD DEALERS WIN

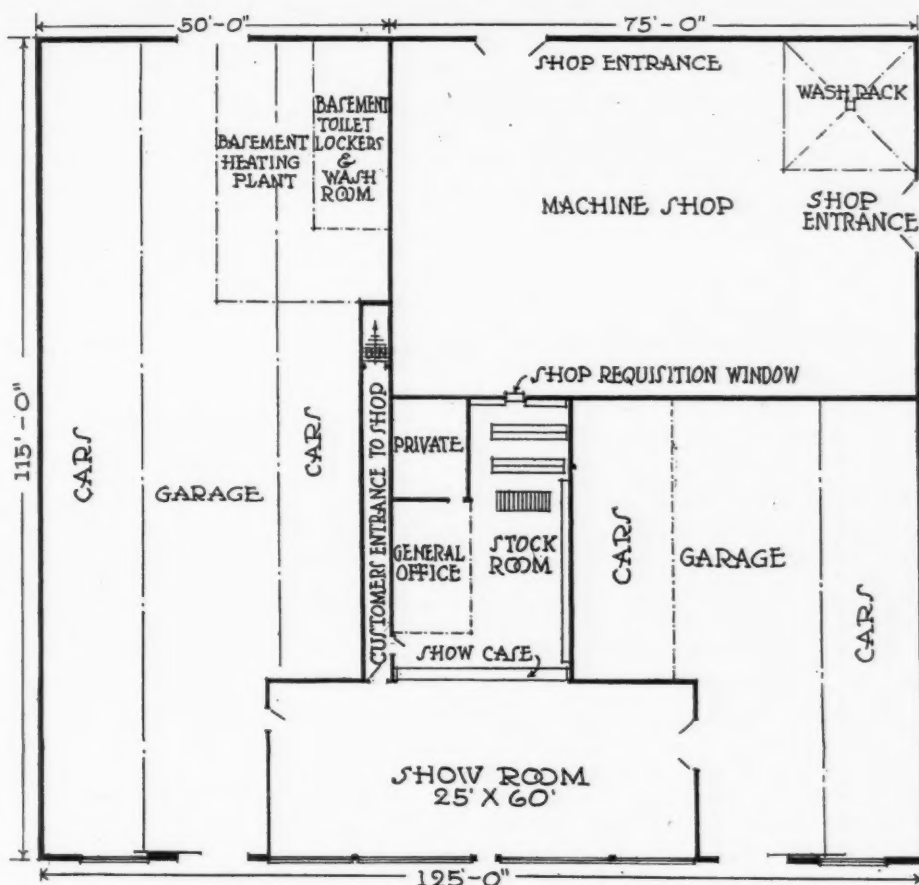
HOUSTON, Texas, April 4—San Antonio Ford Dealers won the prize in the contest among the district dealers of the Houston branch. The San Antonio dealers sold 1709 new Fords between November 1 and February 28, which was 249 more than Houston dealers could show. E. M. Alsbury of Houston, however, led the field with a total of 75 sales.

One of Montana's Best



Above is shown an exterior view of the home of the Montana Auto Supply Co. at Dillon, with the stock room below, the latter being separated from the car salesroom at the front by the show cases. The show room accommodates six automobiles and is 25 x 60 ft. in size facing the main street of the town. It is indicated in the exterior view by the four center windows. The Montana Auto Supply Co. was founded in 1909. It is one of the oldest continuous Buick agencies in Montana, having handled that line since its start. The company also handles Cadillacs and Chevrolets. It attributes a great deal of its success to contact with the trade through advertising. It has a complete multigraph outfit and circularizes the trade from one to two times each month. Note the attractive manner in which the tires and accessories are displayed

The first building was erected in 1910, being enlarged materially in 1912; in 1914 a building was added 50 x 125 ft. In January, 1922, the old quarters were destroyed by fire. Work was immediately started on the new structure which was completed in June of that year



An examination of the layout of the building will indicate that it was designed to facilitate the work of the various departments. Fred Woodside is the sole owner. He is one of the best known mechanics in Montana and supervises the machine shop which averages about 12 mechanics the year around. The machine shop is approximately 50 x 75 ft. in size and is equipped with modern devices and labor-saving tools. Work has been done on at flat rate basis for several years

Ford's Used Car Sales Policy

What It Means to Dealer to Owner

By D. M. McDONALD

LAUNCHING of the Ford Motor Company's new national used car sales policy, announced April 2, in MOTOR AGE, reveals one of the most important movements ever instituted by an automobile manufacturing company to gain control of its used car situation.

In view of the vast coverage of the Ford dealer organization and its extensive resale activity the influence of the company's new system promises to be far-reaching. Based on unit volume, it is pointed out, control of the used car situation by Ford would mean control of more than half the country's full resale trade.

It is too much to assume, of course, that the Ford company hopes to attain complete domination of its used car problem, but it is indicated that Ford officials expect the recently devised arrangement to contribute much toward simplification of the riddle and freer movement of second hand vehicles.

The company's used car policy was designed more specifically for the twofold effect of stabilizing Ford used car values strictly on a basis of unused transportation—and to bring Ford used car business to the authorized Ford dealers. Under the plan cars bear a seal guaranteeing them to be in good condition and dealers are required to see that they give service as represented in the sale.

Has Features of Canadian Plan

In some respects the plan resembles the used car plan initiated by the Ford Motor Co. of Canada, Ltd., in 1924, the principal departure being in the appraisal method. Under the Canadian plan values were set according to a general average of allowances throughout the Dominion. Under the plan now launched values are fixed strictly according to the condition of the car and its capacity for further use.

To assist dealers in making this true valuation the Ford company is preparing a guide which shows how car values are affected by the condition of the parts of the car generally. Every detail of the construction is covered in this guide and dealers are required to fill these in on an appraisal sheet and consider every feature in making his allowance.

The car then has to be reconditioned to the point that it will yield satisfactorily the unused transportation. This unused transportation is the sole determining factor of the value and dealers in selling it must do so at a profit of at least 20 per cent. This means that cost of reconditioning and entitled profit must be taken into consideration in making the appraisal, so that the resale price will conform strictly to further transportation value.

Week's Trial by Purchaser

Under the guarantee plan the prospective buyer is informed that he may use the car for one week and if it is not satisfactory he may return it to the dealer and get full allowance on another used car or on a new car. The car is guaranteed to be in good mechanical condition and the dealer is obligated to give free service on it for 30 days. The guarantee is voided if the owner has any repairs made on the car by anyone other

High Spots of the Plan

Capitalizing unused transportation, rather than fleeing from it, is the big idea behind Ford's used-car policy.

Valuation of the car is based altogether upon unused utility in the reconditioned unit.

Dealers must sell the Ford used car at a profit of not less than 20 per cent so that re-sale price will conform to the car's further transportation value.

The car is guaranteed to be in good mechanical condition and the dealer must give free service on it for thirty days.

Under the guarantee the prospective buyer may use the car one week and if it is not satisfactory return the car and obtain a refund or another car in exchange.

than the dealer selling it during this period.

In initiating the policy the Ford company through advertising, posters in dealer windows and other forms of publicity is showing to the prospective owner the advisability of buying his contemplated used Ford from the authorized dealer.

By setting up the 30 day guarantee as to mechanical condition, the Ford company insures that the dealer appraisal will be genuine and complete, as any expense of service during this period must be borne by the dealer. It is not required that the dealer tear down any enclosed parts to ascertain their condition as the company feels that an experienced appraiser can determine the condition of such units by operating the car.

The plan will have the effect of setting up a more uniform system of appraisal throughout the Ford dealer organization, and consequently a more uniform pricing, obviating the possibility of owners gaining through "shopping" to the detriment of dealers generally. That dealers have suffered through loose appraisal methods is indicated by the company in making the plan known and it is determined to control this situation.

Company to Watch Appraisals

All appraisals as made by dealers will come to the attention of the Ford company and where these have not been made on a basis conforming strictly to the remaining transportation value the dealer will have the facts called to his attention.

Cars which have only limited further value for transportation will not be reconditioned but will either be scrapped by the dealer or sold "as is" with the customer fully informed of what he is getting. Dealers are free to salvage such parts of the cars they scrap that may be of resale value as used parts, this conforming to the general policy of the company on scrapped cars now effective.

With the car guaranteed to be in a definite mechanical condition it is expected that finance companies will accept used car time sales as they have new cars.

Edsel B. Ford's Statement

IN a statement to the public, by Edsel B. Ford, president of the Ford Motor Co., on the used car guarantee policy, he says:

"Every used Ford car represents so much unused transportation and is of value to someone. The Ford dealer through his position and intimate knowledge of the car certainly is the best judge as to the value of this transportation, the best to determine a price on the mileage the car may yet be expected to deliver. With this advantage the Ford dealer is prepared to give his used car customers benefits not likely to be obtained elsewhere.

"If reconditioning is necessary he has the work done by trained Ford mechanics using improved equipment and genuine Ford parts, and with these economies and advantages he is able to offer the used car to the purchaser at low cost and with a guarantee covering its mechanical fitness."

Star and Durant Flat Rates

Some Price Revisions Announced by Manufacturers to Apply to Operations Described in MOTOR AGE Chart

VARIATION of Star and Durant official factory flat rates as at present in effect from the schedules given for certain operations in the MOTOR AGE Flat-Rate Chart published Oct. 23, 1924, has been noted by Durant Motors, Inc. Following are the operations in which variations were noted and the revised prices computed from the Star and Durant official schedules by the factory officials.

STAR			DURANT		
No.	Operation	Official Price	No.	Operation	Official Price
2B	Install one new piston or pin only.....	\$1.20	2B	Install one new piston or one new pin when rods are removed for other work.....	\$1.20
3	Grind valves, etc.....	5.40	3	Grind valves—includes removal and installation cyl. head. Removal of carbon, adj. tappets, tune engine.....	6.00
4	Grind valves, etc.....	3.00	4	Grind valves and execute opr. listed on No. 3 when head is removed for other work.....	3.60
20	Remove, install and fit one center or rear main bearing complete.....	21.00	6	Overhaul and quiet tappet, includes fitting new tappets and tappet screws, rocker arms, valve lifter rollers or whatever is necessary to quiet noise in lifter and tappet assembly.....	9.20
22	Remove, install and fit full set of main and conn. rod lower bearings, pistons, pins and rings, etc. (Price incl. full bearings).....	46.50	22	Remove, install full set of main and conn. rod lower brgs, pistons, pins and rings, includes cleaning of engine and tuning.....	61.50
27	Free up and adj. all brakes opr. shafts.....	4.00	32	Install only one rear axle assembly.....	2.50
32	Install only one rear axle w. assembly.....	1.60	43	Overhaul clutch, includes labor of installing and parts necessary to put clutch in running order, except flywheel parts.....	8.60
43	Overhaul clutch, etc.....	6.80	58	Overhaul front axles, includes overhaul of assembly except that no work is done on drag link or str. tie rod assembly.....	8.00
58	Overhaul front axle, etc.....	7.00	68	Clean and adj. carbon.....	2.00
60	Remove and install all steering knuckle bushgs., etc.....	3.40	77	Remove and install one rear fender.....	3.00
65	Adj. steering gear, etc.....	1.20	96	Renew c/s complete.....	33.50
69	Hone out or lap one cyl. bore, etc.....	3.50			
87	Regrind operation, etc.....	38.40			
88	Regrind operation, etc.....	38.40			
89	Renew one cyl. block, etc.....	33.00			
92	Take up and readjust all engine brgs., etc.....	21.00			
96	Renew c/s complete.....	25.40			
97	Overhaul trans. & clutch.....	13.40			

The majority of the above operations are priced lower than in the MOTOR AGE chart, published Oct. 23, 1924.

Good Window Trimming Boosts Accessory Sales

SIMPLE instructions for the use of dealers who want their show windows to help sell more automotive accessories have been worked out by Arthur R. Mogge, merchandising director of the Automotive Equipment Association. Following are Mr. Mogge's suggestions:

1—Remove all obsolete placards, theatre posters, etc., if any are in the window. Take out all merchandise.

2—Wash the window, inside and out. Clean the floor and background of the window.

3—Make a background if the window doesn't have one. This should extend up at least five feet above the line of the sidewalk in front of the window. Light lumber, or heavy wall board properly supported will suffice. Crepe paper mounted over a frame to fit the back of the window is another very inexpensive method.

4—Colored coverings for floor and background. Crepe paper or cloth may be used. Bright colors attract attention and

bring out details of the merchandise displayed. Blue, green, purple, red and orange are good, but they must be changed frequently as they fade when exposed to intense sunlight. Yellow and White are good. They are not as forceful as some other colors, but they are more durable. Black meets the approval of many accessory dealers because it does not show the dirt, doesn't fade and "sets off" nicked finishes. Black, however, does not bring out the details of many automotive products which have a black enamel finish.

5—Pedestals and Shelves are excellent to elevate display merchandise above the floor of the window. The desired effect can be gained by using boxes of various sizes and boards covered with crepe paper or cloth. Merchandise should be up off the floor, and placed so that the people driving past in an automobile can see the item featured.

6—A central object should dominate the window. It should play a very im-

portant part in getting over the idea of the window. From this large central object group placed in the rear center of the window, all other items should radiate, either in rainbow, pyramids or stair-step formations. Larger items should be in the back of the window, either in the center, corners or both. Medium sized items should be about half way back in the window and the smaller items should be in front.

7—If possible, tie up with the advertising campaigns of manufacturers of the merchandise displayed.

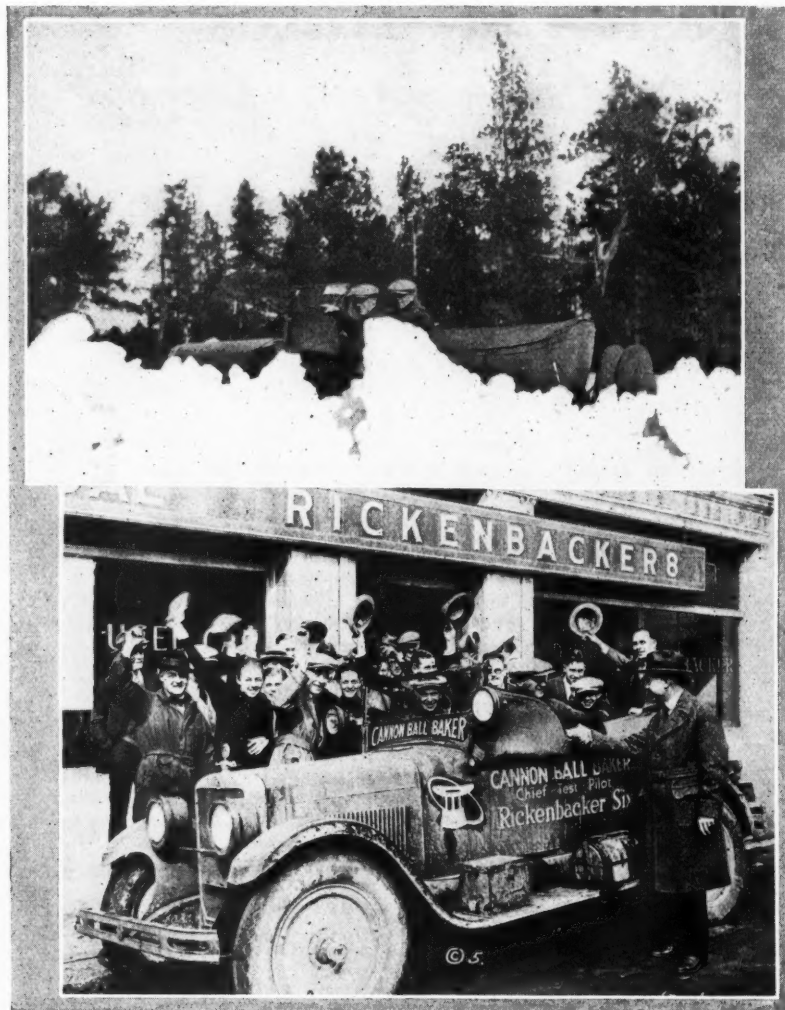
8—Have the window properly lighted, and if located on a thoroughfare, keep the window illuminated at night.

9—Have ample stock on hand to take care of all orders for merchandise shown in the window.

10—Clean Up! Paint Up! Sweep Up! Mop Up! Doll Up! Dress Up! Check Up! Wake Up!

11—"Ask 'Em to Buy" and "Ask 'Em to PAY."

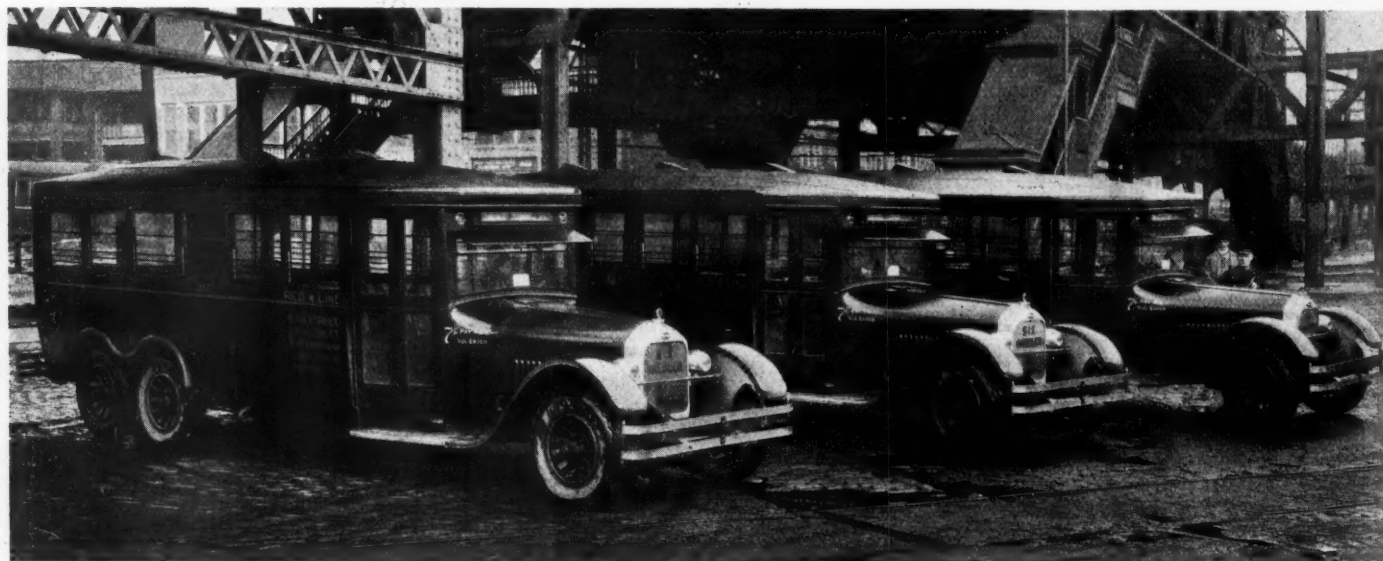
MOTOR AGE'S PICTURE PAGES



TRYING THEM OUT. (Top) "Cannon Ball Baker," chief Rickenbacker test pilot, following in the path of a snow plow in the White Mountains, Arizona, on his coast-to-coast trip; (bottom) the same driver in Los Angeles after the conclusion of his spectacular run from the Canadian border to Tia Juana, Mexico.



FROM ALL ANGLES. Night view of turn-table at Chicago service station of the Biflex Corp., Waukegan, Ill., which is used to good advantage to display the company's bumpers.



AT THE SERVICE OF PHILADELPHIANS. Three "Safeway" city type six-wheel coaches operated from the terminus of the elevated rail line, by Thomas B. Lytle. They are serving a large territory on the outskirts of the city.

OF AUTOMOTIVE INTEREST



LET THERE BE LIGHT. This outdoor salesroom for used cars, of the Boulevard Chevrolet Co., Hartford, Conn., transacts a big business. A 1,000-watt light sweeps a beam over the adjacent new car sales room with good effect.



BOTTLED UP. An unique NuGrape bottle body on a Chevrolet chassis, built by the Mercury Body Corp., which never fails to attract attention wherever it goes.



ON LOCATION. Ben Wilson, movie producer and director, shooting pictures on his 10,000-acre ranch near Los Angeles. He is shown with his foot on the running board of his new Marmon 5-pass. sedan. The figure on the horse is Yakima Canutt, the famous cowboy starring in Ben Wilson productions. Dorothy Wood, leaning on the hood, is leading lady.

The READERS' CLEARING HOUSE

Questions & Answers on Dealers' Problems

Crankcase Dilution on a One Lunker

Q.—We are experiencing some trouble with a 32 volt Western Electric Farm lighting engine that dilutes the crankcase to such an extent that it fills up and overflows within a very short time. This engine, which uses kerosene for fuel, has been in use about three years and new rings have been installed once. We suggested honing the cylinder and fitting a new piston. Do you think that this would overcome the trouble—Schaefer's Garage, Meyersville, Texas.

Poor Fuel Vaporization

Crankcase dilution is due in the first place to poor vaporization of the fuel which allows raw gasoline or raw kerosene to get into the combustion chamber. When this happens, poorly fitting piston and rings will permit the fuel to get into the crankcase. Reference to the instruction book on this engine indicates that in starting it is necessary to drain the small fuel tank and put in one third pint of gasoline. The engine then starts on gasoline and gradually draws up kerosene from the reservoir in the base so that the engine next runs on a mixture of gasoline and kerosene and finally on kerosene. The intention, of course, is to get the engine thoroughly warmed up before an attempt is made to use kerosene as fuel. It is quite probable that a new piston and new rings, together with refinishing the cylinder, would prove helpful.

Perhaps you can check the condition of the rings by turning the engine over by hand and listening to see if there is a hissing sound due to the compression escaping into the crankcase. In making this test it would be well to use a roll of heavy brown paper with one end held at the oil filler pipe at the bottom of the crankcase and the other held to your ear. In this way escaping compression can be readily heard. You are doubtless familiar with the general rule that with a cast iron piston the clearance should be .001 inches per inch of cylinder diameter, and if wear has taken place so that about double this amount of

The Readers' Clearing House

THIS department is conducted to assist dealers and maintenance station executives in the solution of their problems.

All questions are answered direct by letter, so the name and address should be given in full. This saves waiting for the answer to be published, which sometimes occurs several weeks late, depending upon the space available.

Readers' names will not be published with articles, if a request to this effect is received with the letter.

Inquiries not of general interest will be answered by personal letter only. Emergency questions will be replied to by letter or telegram.

Also state whether a permanent file of MOTOR AGE is kept, for many times inquiries of an identical nature have been made and these are answered by reference to previous issues.

Addresses of business firms will not be published in this department but will be supplied by letter.

Technical questions answered by B. M. Ikert, P. L. Dumas and A. H. Packer; Legal, by Wellington Gustin; Paint, by G. King Franklin; Architectural, by Tom Wilder; Tires, by a Practical Tire Man; General Business questions, by MOTOR AGE organization in conference.

clearance exists it is no doubt time to do as you recommend. Heat to the intake manifold would also help.

USING SKELETON PISTONS

Q.—Could you tell me where I can get some skeleton cast iron pistons for Hupmobile, model R, 1922, like the Hupmobile used in their 1924 and 1925 models?—R. W. Calder, 620 Maple avenue, North Platte, Nebr.

The skeleton type of cast iron piston used in the current model Hupmobile can be secured from any authorized Hupmobile dealer. The 1925 model pistons are interchangeable with the pistons in the 1922 cars.

The Stuff That Grease Is Made of

Q.—Will you kindly advise me what the difference is between marine valve oil, made by the Standard Oil Company and 600-W oil?—William H. Lindsay, Belton, Mont.

Marine valve oil and 600-W oil are both steam cylinder lubricants. It is impossible for us to state exactly the constituents of these but both are used for the same purpose in the steam engine vehicles, although the Standard Oil Company recommend the Polarine transmission oil in preference to their valve oil as a transmission lubricant. Both are compounded from heavy cylinder stocks and fats.

Q.—Is marine valve oil a suitable transmission oil and would you consider it better than 600-W?

It is contrary to the policy of MOTOR AGE to recommend or condemn any article of automotive merchandise. The answer given to question No. 1 applies here.

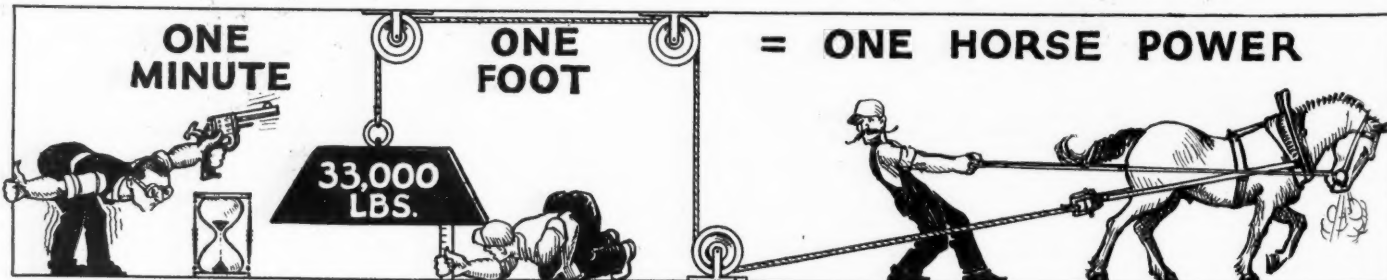
Graphite As Lubricant

Q.—What are the advantages of a graphite grease or the addition of flake graphite to a grease or oil?

The theory behind the use of graphite as a lubricant is based on the supposition that it forms a film on the bearing surfaces tending to fill the smaller interstices and in effect to reduce the coefficient of friction of the bearing.

Q.—What is calcium soap in cup grease and is it a desirable element in a lubricant?

Practically all greases have soap as their base. In other words, the soap is used as a vehicle to support the liquid lubricant. There are in general use such soaps as lime, soda and lead made with various fats and oils. Calcium soap is considered desirable and in the government specifications for cup grease to be used for the lubrication of motor equipment the specifications call for a grease composed of calcium soap made from high-grade animal or vegetable oils or fatty acids and a highly refined mineral oil. Practically all steam valve and cylinder oils are made up from heavy cylinder stock with fats added.



That those who run may read—The definition of Horse Power

Planning Your New Building

By TOM WILDER



A Good Way to Add to an Old Building

Q.—We have a lot 100x160. The present two-story building occupies a space of 50x100 on the west side of this lot and faces the south. There is an open alley alongside the west. It is our intension to build an extension on the rear of the present building, making it 50 by 160, two stories and in addition build on the adjoining lot on the east making the entire building, when completed, 100x160 within a 100-foot frontage on the principal street.

We would like to have you furnish plans giving the most convenient arrangement for storage, general repair shop and ample but not extensive display room for automobile accessories and replacement parts. Storage and repair work being the bulk of our business, we desire to give this all the attention possible. Automotive Service, Inc., Mt. Vernon, Ill.

Space for Future Use

We regret that you have not given us more details regarding your old building as its condition and construction would have considered to do with the proposed addition.

If this building is to be primarily for storage and service we would deem it highly advisable that you install a ramp, making it wide enough for traffic both ways, then there need never be any danger of collision or congestion.

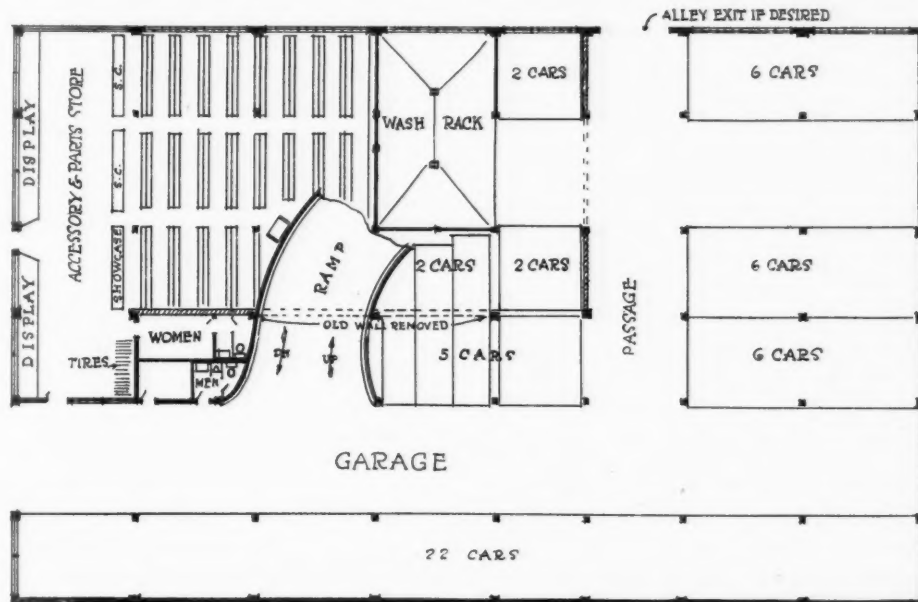
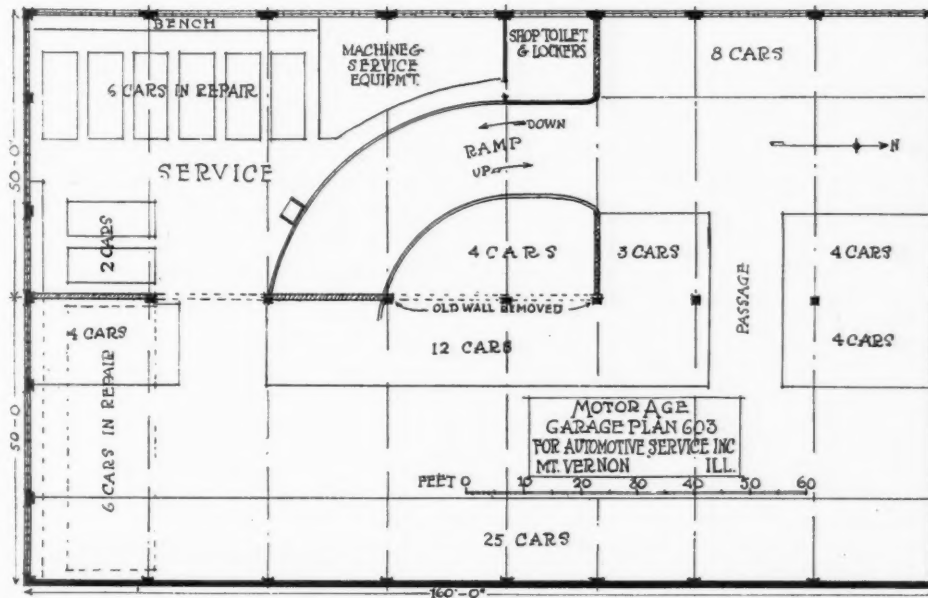
We do not doubt but what we have given you more room for storage and sale of accessories than you need, but judging from your letterhead and the tone of your letter you do a considerable business in replacement parts and it may be possible either now or a little later to use all of this space.

The ramp might be pushed forward one row of columns, but if this is done the space on the second floor, used as service department, would be of use only for small shops and we would think it better to use part of this space now shown as accessory storage space for such purposes as electric repair, battery service, tire service or something of that sort, which could be handled from the alley side or if the alley is not suitable the space between the main car entrance and the store entrance could be used for these shops as far back as the ramp, leaving the other half of this section for parts and accessories.

Column Spacing Important

We have shown your old wall reinforced by either concrete or steel piers spaced 21 feet on centers for the support of the new work and trusses in the new building. The spacing of these columns is very important to get the full benefit of car storage and we would think it best not to alter this item whatever the condition of the old building. An electric elevator or dumb-waiter supplies parts to the shop from the main parts storage room.

We believe that an alley entrance is not really necessary as your main en-



A ramp is highly desirable in a storage building and an easy two-way ramp is best.

trance is large enough for cars going and coming and it is handy to the ramp as well.

As indicated on the second floor plan service may be confined to the old section of the building or may be extended the full width of the frontage, according to business demands. You will note also that on both lower and upper floors the walls of the old building are cut away in sections so that cars may be stored within the circle of the ramp from the new building side. This space is not accessible from the other side.

This will be a very serviceable and well laid out building for the purpose for

which it was intended.

MARMON DISTRIBUTOR NAMED

INDIANAPOLIS, April 6—Announcement of the appointment of the Hemphill Motor Company as Marmon distributors in Kansas City and tributary territory has been made by H. H. Brooks, sales manager of the Nordyke & Marmon Company. W. P. Hemphill, former president of the Continent National Bank of Kansas City, is president of the company and R. H. Hemphill is secretary-treasurer. This company has represented the Oakland car in the Kansas City territory, which it will continue to do.



Clearing Up Electrical

EDITED BY A. H. PACKER

Magnetic Requirements of Armatures and Fields

Q.—In regard to a simple electric motor having two field poles and four armature poles, the armature being of the drum type, that is, its winding being wound in slots, would like to know how this armature is wound and how it is connected to the commutator bars. Would also like to have brief explanation of the action of this motor as we need this information to settle an argument.—Carlos Farris, Tilford, Ky.

With a two pole motor or generator it is necessary to have a two pole armature and with a four pole motor or generator it is necessary to have a four pole armature so that the type of machine you mention is not a possibility. Sometimes however, a four pole motor may have coils on two of the poles only, so that it might look like a two pole motor but in reality there are four magnetic poles. We are showing an illustration which gives the simple principles of two and four pole motors.

At the upper left hand sketch is the two pole motor and it is necessary for the current going through the armature to produce local magnetic poles in between the field poles. If we assume that the armature is to turn right hand or clockwise as seen in this sketch it would be necessary for a south pole to be at the upper part of the armature and a north pole at the bottom. Then as unlike poles attract each other it would account for the armature turning to the right. In similar manner in considering the upper right hand sketch we would necessarily have armature polarity as indicated.

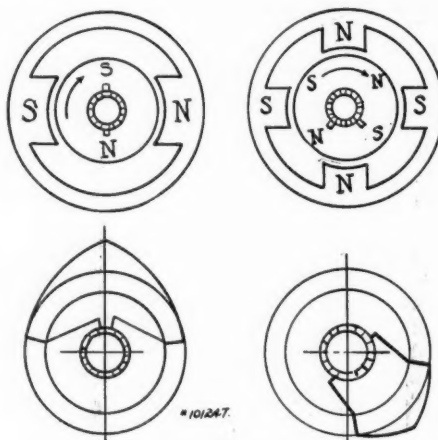
Might Have All Windings on Two North Poles

It would be possible to have all the windings on the two north poles or else all of it on the two south poles or else have a coil on all four poles. It is also possible to have two brushes located at 90 degrees from each other as shown or it is possible to have four brushes spaced 90 degrees apart.

If this is done the opposite brushes are of the same polarity and are usually connected together by a heavy copper connection or rocker ring. In the lower left hand sketch we have indicated the connections of a single armature coil which would be required in the two pole machine. Taking a single pair of commutator bars we find that the coil has its two sides approximately 180 degrees apart, this being known as a lap winding because the connections from the coil lap back and come to the bar next to the one from which the coil connection started. In this way the winding would progress from bar No. 1 to No. 2 while the next coil would go from bar No. 2 to bar No. 3 and the next one from No. 3 to No. 4 and so on.

When the armature was complete, sending current through it from the brush positions would give two magnetic poles as shown in the upper left hand illustration. The lower right hand illustration shows the coil connection for a four pole armature. This is known as a wave winding, because when the winding starts out from bar No. 1 to go through a coil it does not come back to bar No. 2 but goes to the opposite side of the commutator.

The next coil would bring the winding back either to bar No. 2 or to the bar just previous to No. 1 so that it necessitates tracing through two coils before the circuit comes back to the same side of the commutator. In this armature there are four reversals in the direction of current at different points in the armature which gives four magnetic poles, as indicated in the upper right hand sketch.

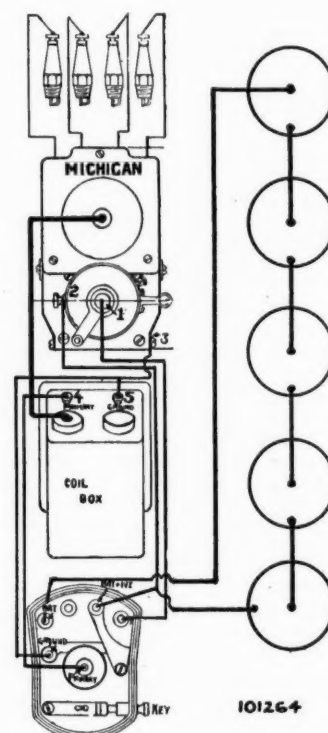


Two and four pole fields and the armatures that go with them

A Current Item From the Distant Past

Q.—Supply wiring diagram for Michigan low tension magneto used on 1914 Richmond car.—McDaniel & Replogle, New Castle, Ind.

Information we have on the Richmond car does not include a diagram. We are showing, however, typical wiring diagram applicable to a low tension Michigan magneto, and believe this will serve your purpose.



Michigan L. T. magneto winding

What to Do With Excess Current

Q.—In MOTOR AGE April 5, 1923, you had an article and a number of diagrams showing how to connect a current consuming rheostat to a generator. I would like to put one on a Nash 6 cylinder, Delco equipped car, purchased in July, 1924, the generator number being 51032. Normal charging rate is 17 amperes. Could you tell me where I could get a rheostat that would safely carry about 20 amperes? My idea was a carbon rheostat like the Allen Bradley people put out for radio tubes but I do not believe it would carry the current.—Mervin C. Lawton, R. D. 1, Dixon, Ill.

This generator has a third brush adjustment for reducing the charging rate and if a car is to be used for touring for any length of time it would be desirable to reduce the current output be-

low 17 amperes. Perhaps 8 or 10 amperes would do for summer driving. On the other hand a current consuming rheostat can be used to take care of abnormal conditions as on an occasional trip when the battery is already in a full charged condition. The same concern makes the Bradleystat which is designed for the purpose to which you refer.

It would also be possible to use one or more headlight bulbs mounted in sockets put in parallel and placed under the hood where the light would cause you no inconvenience. The proper place to connect either a rheostat or a lamp bank is from the generator terminal to the frame of the car and it might be well to have a switch in the circuit so that the current consuming device can be used or not as desired.

Trouble With Bill Fixit

EDITED BY A. H. PACKER



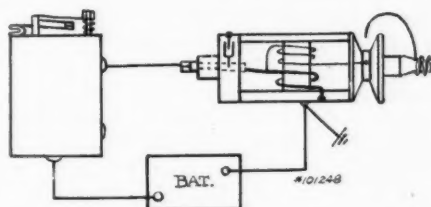
This Reader Made a Good Magneto Armature Tester

Q.—As a reader of your paper since last July I want your advice on a tester that I have made from a Ford coil, this tester being used to test magnetos. I removed the secondary winding from the Ford coil leaving the primary and vibrator points and condenser. To use this tester I connect the magneto primary and the tester and a 6 volt storage battery in series and use a test gap for the magneto secondary. Then when completing the battery circuit the points on the coil vibrate and the sparks jump at the test gap. Is the 6 volt battery strong enough to use with such a tester and is the tester reliable. The connections are made as indicated by the enclosed sketch.—F. M. Yearsley, Hockessin, Delaware.

This should be a very good way of testing a magneto winding. We have reproduced your sketch to show the general idea. The gap distance should be from $\frac{1}{8}$ to $\frac{1}{4}$ inch. If the gap is made too great it may break down the secondary winding and spoil it when otherwise it would be O. K. If the spark will jump regularly a gap of about $\frac{1}{8}$ inch it will be satisfactory when the armature is in the magneto and the unit is in use on the car. Instead of the Ford coil it is possible to use a mechanically

driven interrupter with condenser if one is available.

The mechanically driven interrupter is better for checking for an occasional miss. With the vibrator an occasional miss might be due to erratic operation of the vibrator rather than to trouble in the magneto winding. As far as voltage is concerned a 6 volt battery should be all right but you can try 8 volts if you wish to, as there is no limit to the voltage except from the standpoint of overheating of the windings or burning of the vibrating contacts. Limiting the spark



This Ford coil had its fangs pulled

gap will prevent excessive voltage in the secondary winding of the magneto armature.

1750 R. P. M. For Home Made Charging Set

Q.—I have a letter from an electrical concern offering me a $\frac{1}{4}$ horse power motor for driving a Ford generator for the purpose of charging batteries. They say this motor will run 1,750 r. p. m., which I think is too much for the Ford generator.

We believe that this speed will be all right and that you can direct couple the generator to the end of the motor shaft. You must remember that the generator runs $1\frac{1}{2}$ engine speed so that 1,750 r. p. m. of the generator corresponds to about 1,160 r. p. m. of the engine. It will be necessary to have a very flexible coupling so that you do not put any strain on the bearings as this would cause overheating.

Q.—We are considering using a Gray & Davis generator which has a cutout on top with three sets of contacts. How could this be wired to the battery?—T. A. Hunter, Depot Garage, Westphalia, Ind.

On this Gray & Davis machine two sets of contacts operate to regulate the current while the third set is included in the cutout action. A diagram of this system was shown on page 50 of the May 22, 1924, issue of MOTOR AGE and we are mailing this page to you. Your battery could be connected the same way as the one shown in this diagram.

Legal Questions Answered—

By WELLINGTON GUSTIN
of the Chicago Bar

WHAT IS UNFAIR COMPETITION

Q.—I would like to ask you a few questions. I was working for a Ford dealer for five years. I have also taken up a Ford Service course at the Ford Motor Co. at Detroit, Mich. Now I have started a Ford service station for myself in the same town where I worked, and the dealer where I worked is jealous of the success I am having. I have put up a sign on my building as follows: "Ford Service Station, Ford Electrical Work a Specialty, Ford Magneto Recharging," also "Ford Service" on my truck.

So the dealer I worked for reported me to the Ford Motor Co. at Milwaukee about using Ford's name on my signs. The Ford Motor Co. sent out a man and he called on me and told me to remove the name "Ford" on the signs within 30 days. I have always been using genuine Ford parts in repairing Ford cars, but I have not gotten the parts from the dealer in town, as he would not accept an order from me because I started in business for myself, so I got them in a town 5 miles from here.

Kindly advise me if I must remove the name "Ford" from my signs.—Wisconsin Reader.

I am not so sure but that you are within your rights in the use of the name Ford on your advertising. Of course one who establishes a trade-mark

is entitled to its exclusive use in the sense that no other may make a product and attach another's trade-mark or name. Ultimately the right rests upon the fact that such acts are a fraud upon the public, in that the customer does not get what he is led to think he gets through the mark or name. Another reason for the exclusive use of a trade-mark or trade-name being permitted one who establishes it, is that it is unfair competition on the part of others to use one's established mark.

Doctrine of Unrestricted Trade

Under the latter theory the facts might show that there is unfair competition on your part against an agent of Ford. Here is your rub in this case. But where you deal in genuine Ford products, and do not mislead the public as to the goods you sell, I can see no valid reason why you cannot say so in your signs, except by the limitation of the latter theory of unfair competition. Against this is the right of unrestricted trade, and the courts lend themselves wherever possible to prevent any restraint of trade. That is in your favor. As I understand you

are not using the Ford trade-mark, nor representing yourself to be a Ford Agent, but are concerned in repairing and merchandising Ford products or products for Ford cars, etc., in the ordinary channels of trade.

HIRE A PATENT ATTORNEY

Q.—I am writing you for some information about getting a patent on a timer for a Ford, a two-post. What would it cost to get one and what would be the best way to get one. Any information will be very much appreciated.—John Kruse, Geneseo, Kan.

Write the Commissioner of Patents, Washington, D. C., for complete information as to obtaining a patent. The fees required by the Patent Office are about \$30. But you need a good patent attorney to properly protect you in making claims and drawing specifications, as it is upon these that the validity of the patent rests. A patent must be able to stand the test of a court, and it requires a skilful attorney to so draw the specifications and claims to secure all that one has discovered and invented and to protect the same.



Motor Age's Flat Rate Forum

EDITED BY PAUL DUMAS

A Packard Dealer Voices His Opinion

To the Editor of MOTOR AGE:

In regard to the flat rate printed in your former issues, in fact, the flat rate in general, there is a great deal that can be said, both for and against it. And while it works out very satisfactorily in a great many cases, it likewise works out very unsatisfactorily in a large percentage of cases. It invariably costs the owner a rather high rate for service, where the service department is actually operated upon a sound and efficient business basis.

An Objection Is Cited

The flat rate also has a tendency to force a number of mechanics to do a poor job in order to get under the rate unless the service department is provided with adequate inspection after the job is completed.

There is no doubt but what there will be a practical solution on service problems come out of all this discussion and various ideas of servicing automobiles. However, at the present day if we go into well established and old companies' places of business, operating a highly efficient machine shop making repairs, we very soon discover that the bulk of their work is done under the time and material plan. This, of course, is machine work to a large extent, nevertheless, the same problems enter into this

work to a large extent that enter into servicing of motor cars.

Then on the other hand we will take as an example, two Packard model 2-26 sedans belonging to two different owners. Both cars came into the service station at the same time, both want their brakes relined, correctly adjusted and the entire running gear tightened up, all necessary adjustments made and thoroughly lubricated. We will say both cars have run 20,000 miles. One of these cars has been operated by an owner who has brought his car in for inspection every five or six hundred miles, had it lubricated, brakes tightened and adjustments made when necessary. The other man has taken care of his own car, and has never had it lubricated from the time he purchased it. He has never had it adjusted or tightened up, so that many of the spring bolts are blocked up, necessitating removing them to clean the oil grooves. Many of the brake connections are rusted and frozen, so that it is impossible to adjust the brakes without doing a great deal of extra work.

You could go on and write several pages on this subject, but to condense the matter and get down to facts there is no relative comparison between the cost of servicing these two motor cars. The man who has taken care of his car makes it possible for you to render the

WRITING REPAIR ORDER FIRST REQUISITE

The amount of intelligence exercised in writing the repair order for flat-rate repairs is the most important phase of the system. The old story of the unfairness of the flat-rate system to the owner who takes care of his car is largely due to improper repair order compilation.

For instance, on brake jobs it is absolutely necessary that the car be inspected before the order is written. What appears to be a simple job of "reline and adjust brakes" may on inspection require the addition of one or more operations to cover "free up brake linkage" or "renew brake operating shaft." The same applies to removal of shackle bolts, and king bolts. An intelligent inspector can generally detect whether or not these parts have received regular lubrication and can prescribe the necessary flat-rate operations that will take care of them.

Where the part or mating part is visibly rusted the labor necessary to remove it may be sold on flat rate, taking into consideration the time required to saw or burn it off or remove the unit and take it to a press. Where this can not be done the logical procedure is to take the job of removing such frozen parts on a strictly "time" basis. The success of the flat-rate system begins with properly inspecting the car and intelligently writing the repair order.

MOTOR AGE'S FLAT RATE FORUM

No. 8

HUDSON-ESSEX FLAT RATES FOR MISCELLANEOUS ENGINE REPAIRS

Manufacturer's
Official
Designation

Labor-Hour Charge
for Operation
Hudson Essex 4 Essex 6

M-1 Overhaul motor. Put all parts of motor in first-class condition, repair or renew necessary parts in the electrical system and carbureter. Includes cleaning and painting motor. To be used when motor is taken from frame	75	65	40
M-2 Tune motor. Clean distributor points, renew if necessary; clean plugs, set timing, tighten packing gland nut, polish carbureter bell, clean carbureter screen, set tappets to proper clearance. Motor must hit and start easily before being O. K'd.....	1 3/4	1 3/4	1 1/2
M-3 Set spark timing. Set distributor point to proper clearance, clean or renew if necessary. Clean and set spark plug points	1/2	1/2	1/2
M-4 Renew valve springs. Remove all valve springs and install new springs, washers and retainers if necessary....	1	1	1
M-6 Grind valves, tune motor, clean carbon, set tappets and clean carbureter. Take play out of rocker arms on Essex 4. If one or more tappet screws need changing, do so on this operation. Not to be used when tappets are overhauled. Includes M-2.....	7	6	6

service under a flat rate price, and make a very satisfactory profit. The man who has neglected and abused his car, you find will cost you more to service his car than you can get from him under the flat rate system, therefore, you sustain a loss in this particular case on the man's car who has neglected it, and you earn a profit on the man's car who has taken care of his car.

Claims Careful Owner Suffers

Therefore, it resolves itself into one thing, that there isn't much incentive for the owner who is careless to take care of his car to avoid paying excessive service cost. On the other hand it is somewhat unfair to make the man who takes good care of his car pay for part of the service you render on the man's car who refuses to take care of it.

This is a very common occurrence, we come in contact with these conditions often, nevertheless we apply the flat rate in servicing automobiles when ever the owner prefers it. But in many cases our owners prefer the time and material system in preference to the flat rate, as it invariably saves the owner money where he has taken good care of his car.

Yours truly,

LUCIA BROTHERS, (PACKARD.)
(By W. E. Lucia.)

Green Bay, Wis.

BOOSTING ACCESSORY SALES

Valley Battery Clip

The purpose of this clip is to prevent damage through battery acid corrosion. All parts of the clip are electroplated with special metal. It is claimed that the process penetrates the clip itself thereby making it a more effective acid-resisting medium than otherwise. The clips are made of sheet steel, blanked and shaped in automatic dies, with ribs and channel shape to give additional strength. The channels of the two halves are opposed to each other so as to form a rounded shape.

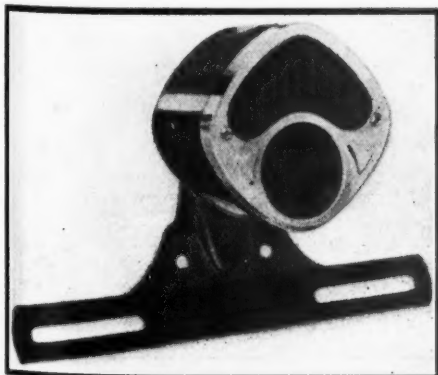
The spring action between the parts is obtained by means of a coiled spring of steel that surrounds the rivets holding the halves of the clip together. The spring is oil tempered after forming and is proportioned to give easy positive action to force the sharp teeth of the jaws through any scale of corrosion on the battery terminals. It is claimed that the teeth hold tight and make a perfect electrical contact. An oval head screw is provided for securing the lead wire to the clip. Then the lugs hold the lead insulation after the wire is attached to prevent frayed insulation or bending and



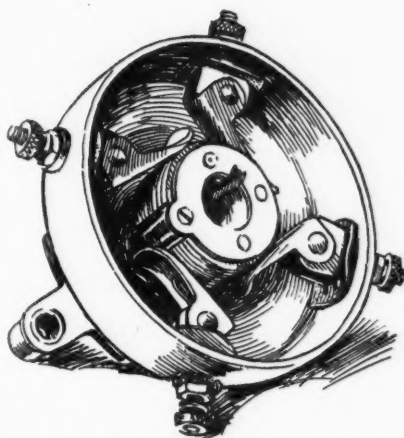
Valley battery clip

breaking of the wire at the point of connection. The over-all length of the clip is 2½ in., and the jaws provide an opening that will admit round battery posts up to ¾ in. diameter. Rated charging capacity is 25 amperes.

The Valley Electric Co., St. Louis, Mo., are the manufacturers.



Stover tail stop signal



New timer for Fords brought out by Elgin (Ill.) concern

Elgin Timer for Fords

The shell of this timer is made of heavy gauge metal to which the four contacts are attached, being properly insulated from the shell by means of fiber washers. The contacts are provided with a hinge, normally held against the roller by a small spring wrapped around the pin which holds the hinged portion to the stationary part of the contact. In as much as there is but slight movement to the contacts, the springs are stressed but slightly and it is claimed they last the life of the timer. The roller is made up from eight laminations of fiber and has two pressed steel end pieces, the entire assembly being held together with three rivets. A keyway is cut in the hole for attaching to the end of the Ford camshaft. A steel roller is partially sunk into the fiber laminations and is mounted upon a pin which runs lengthwise through the roller. A slot in the end of the pin permits of turning the roller into a new position to compensate for any wear induced by the four contacts wiping over the roller. The price of the Elgin timer is \$2, and is made by the Elgin Timer Co., Elgin, Ill.

Stover Tail-Stop Signal

The latest addition to the Stover line of signals is the company's tail-stop signal Model 600, which is priced at \$4. It is a combination tail lamp, license plate holder and stop signal, and is furnished with or without bracket mounting. It has a polished full nickel face, and is fitted with a fluted stop lens and corrugated tail-light lens. Movable mounting studs permit installation without drilling holes. The shell is cold-rolled steel, finished with a double coat of baked-on enamel. The face is of heavy gage brass; the socket is said to be jarproof and is made of solid brass and reinforced with heavy brass tubing. The weight of the signal is 2¾ lbs. Model 600 has the license plate bracket integral with the signal shell; Model 606 is without the license plate bracket. The manufacturer

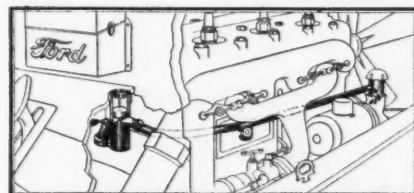
recommends the use of Model 606 for Buick, Chevrolet, Essex, Hudson, Oakland, Oldsmobile, Overland and Willys-Knight, and Model 600 for all other cars.

This signal is made by The Stover Signal Engineering Co., Racine, Wis.

Oil Circulator and Gage for Fords

The Rex Accessories Sales of Racine, Wis., have announced a new combined oil circulator and gage system for Fords. The device consists of a means for forcibly circulating oil through the front of the engine and at the same time providing an indicating oil gage which is visible from the driver's seat.

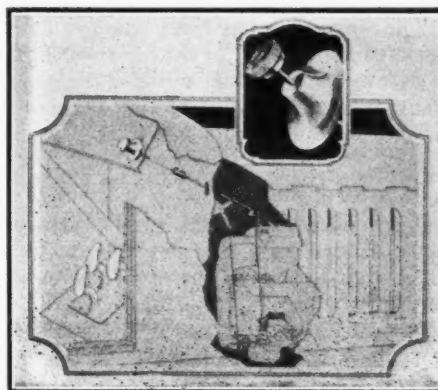
Installation is made without any special tools and no drilling is required. A small notch cut in the front toeboard allows the indicating gage to be seen just under the coil box. The price is \$3. Dealer's box contains six, weight 12 lbs.; jobber's box contains 36, weight 75 lbs.



Oil circulator and gage for Fords

"Bull Dog" Carburetor Control

"Bull Dog" carburetor control is for use on Ford cars. One model fits all Ford cars and trucks and sells for \$1.50. It is the product of the W. H. Thomas Mfg. Co., Spencer, Ia. A spring tensioned steel ball holds the choke in any position until released. It is enclosed in a fully nickeled dash mounting. The flexible steel shaft adapts control to all models of Fords, and the grooves form a seat for the ball bearing device in the friction holder. A ball crank yoke is provided, and a special groove in rod is designed to permit easy turning and positive action of choke.

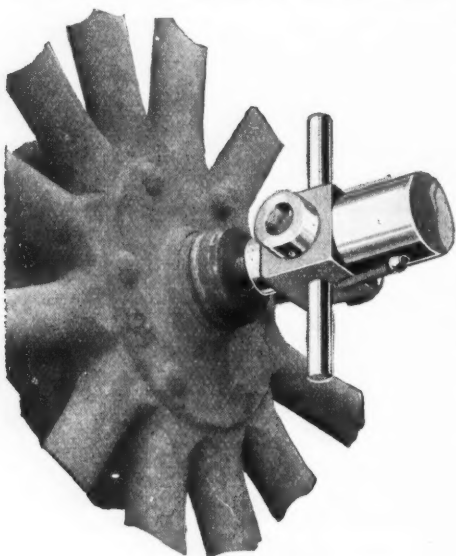


"Bull Dog" carburetor control for Fords

GETTING MORE OUT of the SHOP

E-G Wheel Puller and Piston Pin Holder

Two new tools have recently been put on the market by the E-G Tool Works, 108 E. Lake street, Chicago. The E-G wheel puller is used on tapered axles and has four of the popular sizes in one, these being one in., $\frac{3}{4}$ in., $\frac{1}{2}$ in. and $\frac{3}{8}$ in. The puller is tightened with the handle and no wrench is required. Then the cap is given a slight tap with a hammer which action removes the wheel. The tool is properly hardened and the cap takes up part of the rebound. The $\frac{3}{8}$ in. size with an 18 thread fits such cars as Ford, Chevrolet, Overland, Maxwell,



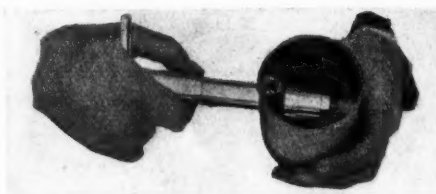
E. G. wheelpuller

etc.; $\frac{3}{14}$ in.—16 thread fits Gardner, Chevrolet Baby Grand, Flint Six, Moon S 636, etc. The $\frac{7}{8}$ in. and one in. will fit Buick, Hupmobile, Essex, Paige, Hudson, Studebaker, Oldsmobile, etc. The price of the wheel puller is \$4.50.

The E-G piston pin holder provides a handle on the piston pin which is especially useful in lining up the set screw holes and to test out the fit of the piston. It is furnished with three adapters for all pins except very large tractor and truck engine pins. A cap is furnished to fit over the threads so that the mechanic can drive out the old pin if necessary. The holder sells for \$2.25.

S. O. S. Steel Stands

These stands are useful in repair shops and garages for elevating motor vehicles to a height whereby they may be worked upon. The stands are adjustable from 11 in. to 18 in. with a 9 in. square base. The latter is known as the No. 11 stand. No. 18 stand is adjustable from 18 to 32 in. with a 13 in. square base. Stands have passed a test of 11,600 pounds. They have a V shaped



E. G. piston pinholder

top that will fit any size axle or frame.

In addition to the stands the company has a stand shoe which bolts to the V shaped tops and makes it possible to place the wheels of the car in the shoes making possible a perfectly clear floor under the car. The No. 11 stands sells for \$2.50 while the price of No. 18 is \$3.50. The stands shoes sell for \$1.50 each.

The S.O.S. steel horse is built with a slot in the top so that a two by four may be bolted to it if desired. These steel horses are particularly desirable in repair shops and garages which do work on only one make of car or truck and where it is desirable to elevate to a given height only. These horses are furnished in heights ranging from 12, 14 and 16 inches. They are 8 in. long and made of one and one quarter in. heavy angle steel.

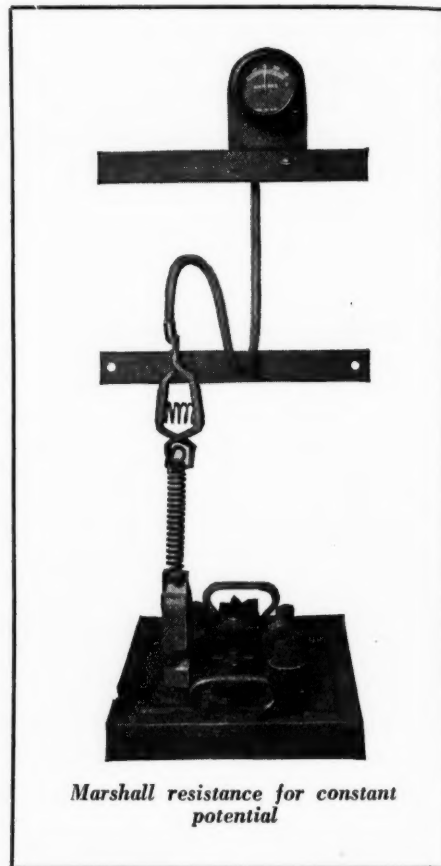
The above stands are made by the Goldwyn Manufacturing Co., 2437, 2445 West 14th street, Chicago.

Barker-State Universal Saw

In the April 2 issue of MOTOR AGE there appeared a description and illustration of the Barker-State Universal Saw, but the name of the manufacturer was omitted. This is the product of R. L. Barker & Co., 642 West Washington boulevard, Chicago, Ill.

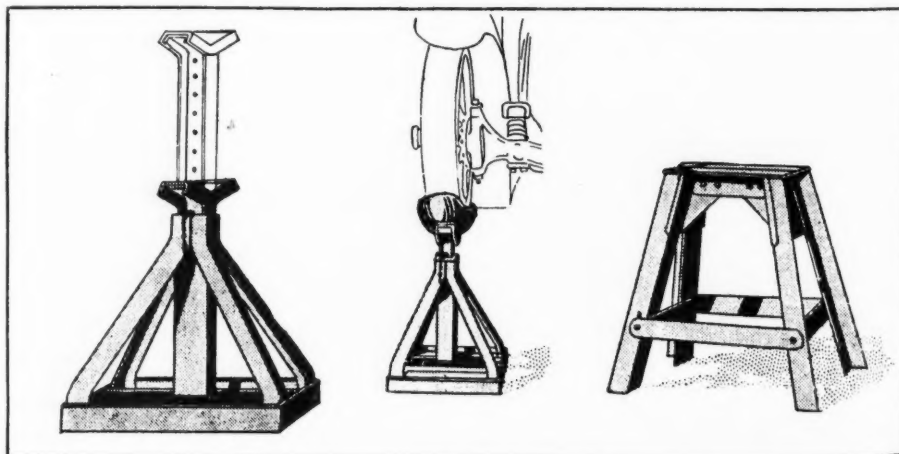
Marshall Resistance for Constant Potential

A resistance device designed to limit the current to sulphated batteries being charged on constant potential lines, has



Marshall resistance for constant potential

been brought out by the Marshall Electric Co. of St. Louis, Mo. It consists of a coil of acid resisting wire, along which a clip slides to vary the resistance in the circuit, a clip at one end serving to make connection to the battery. A high reading ammeter is also available. The combination, including the bus bar ammeter, the regular lead and clip and the Marshall resistance coil and clip sells for \$3. The ammeter alone is \$1.75 and the resistance coil and clip only is 50 cents in case the purchaser does not want the regular lead and clip.



Left to right: S. O. S. steel stand in lowered and elevated position. Center: Stand shoe for supporting car while raised. Right: Steel horse, useful when one make of car is worked upon

EDITORIAL

Don't Forget the Slogan

SLOGANS are valuable only if they are used. The extent to which we cash in on slogans is measured by the extent to which they are used.

In other words, if a slogan is any good at all it is worth using very freely. It is for liberal employment that it is coined.

It struck us that the National Automobile Dealers' Association coined an excellent slogan for 1925. This one is:

"CHAMPIONSHIP STUFF."

There is an inspiration in those two words. The dealer who can sell his salesmen on the "Championship Stuff" idea and put the spirit of these words to work in his establishment will have no use for a bottle of red ink on the last day of December. But the slogan is no earthly account unless it is used and used enough to make it felt.

Mergers and Rumors of Mergers

FOR some time the trade has heard rumors of contemplated mergers. In the early part of the year it was predicted that there would be some important consolidations of automotive manufacturing organizations in the course of the spring and summer. As is usually the case when such reports are afloat these whisperings have brought forth repudiations on the part of certain companies mentioned.

Negotiations for purchase of Dodge Brothers by a group of bankers have been followed by more merger rumors and more denials. Automobile rows are full of gossip. There is bound to be a certain uneasiness among dealers representing companies involved in these stories. Naturally they wonder how they will be affected if their companies are absorbed by new interests that may come along with new sets of policies.

As far as concerns dealers in the Dodge Brothers organization there seems to be no reason why they should feel disquieted as one of the first announcements in connection with this transfer of ownership was that the present broad policies of the organization would be continued. And the policies of the Dodge Brothers organization have been notably sane and considerate. It appears the only great difference promising to grow out of this huge transaction immediately will be in transfer of ownership.

Dodge Brothers will remain—Dodge Brothers—always highly respected by its own field organization and the trade at large. Whether or not it should be merged at some future time with other companies we read pleasurably that the terms of the sale are such that its individuality will be preserved.

It is just as impossible to down these general rumors as it is to keep people from talking and the rumors, themselves, based upon truthful conditions are more exciting than harmful to the general functioning of business.

The rumor based upon falsehood, however, is mischievous and wicked. And this country is fed up on them.

Check the Job Some Way

BY listening to conversations these days one is impressed with the fact that there still are too many concerns in the automotive business which evidently have no means of properly checking work done on cars left there for adjustment and repair.

What excuse is there for the dealer's shop to offer when a customer leaves a car for certain work, pays for such work and then when miles away from the shop finds the work poorly done, or in fact, not done at all? Who is to blame, dealer, mechanic, foreman or all three?

We have felt right along that in most of these instances the trouble is due to not having some sort of system for checking the work. The small shop feels all this sort of stuff is red tape, but better a little red tape than an irate customer cussing the place from top to bottom.

The operations to be done, no matter how simple, should be listed on some sort of sheet and as they are done checked by the mechanic. It does not make a hit with any customer when he is sore about work not properly done and the dealer says, "Well, I can't get good mechanics," etc.

The customer says the job was not done; the mechanic says he did it and the dealer doesn't know what to say. And there you are.

Selling With a Smile

A STRAY item in one of the newspapers appears under the headline, "His Smile Wins Job." And it did not refer to a movie actor. The subject was a salesman who was elevated to the position of sales-manager.

Doubtless this salesman possesses other qualifications aside from the ability to smile, yet his smile helped him hugely in making a record as a salesman and in selling his services to the company as head of the sales department.

The man who knows how to smile and who can smile under trying conditions has a wonderful asset. In competition with him the grouch has little chance.

Production Continues Upward Swing

Output Hits Gait Ahead of Current Retail Sales

Late Demand of Market Should Easily Absorb Present Manufacturing Excess

NEW YORK, April 6.—Production continues to gain rapidly, and appears to be considerably ahead of current sales. This is by no means an unhealthy condition, however, for the demand at the peak of the sales season should readily absorb any excess that is now being turned out of the factories. So long as dealers continue to keep their stocks low there will be no danger of a repetition of the unfortunate situation of last year.

The price reductions that have been made effective recently by a few of the producers are a sign of the sharp competition that characterizes the industry as a whole today. Every device of sound salesmanship is being employed to the utmost for there was never a period in the history of the industry when merchandising was so powerful a factor in success as today. The price cuts do not in most instances seriously affect the prospect for the year's financial returns, as economies in production that were introduced last year are now being passed on to the buyer.

The Dodge Brothers Sale

The large sum paid for Dodge Brothers, Inc., and the keen competitive bidding that preceded the sale are the most significant developments of the year for the automobile industry. The transaction strikingly demonstrates the confidence placed in the future of the industry by the financial community. It is felt that car producers, having passed their time of mushroom growth, are successfully working out the problems that are associated with a period when annual increases will be proportioned by the gain in wealth and population of the country.

An example of the vigor with which these problems are being attacked is the used-car sales policy just initiated by Henry Ford, which requires dealers to make a substantial gross profit on used-car turnover and to guarantee the cars they sell. The effect of the policy should be to protect buyers and end the unfair competition which in the past has made the dealer's lot a hard one, to put it mildly.

Dodge Retail Car and Truck Deliveries Show Big Gains

DETROIT, April 4.—Retail deliveries of Dodge Brothers cars and trucks during the week of March 28 gained 34 per cent over the same week in 1924 and exceeded every week but one in Dodge Brothers history, according to a factory statement. This record though set up in the week that the sale of the company

was being made to Dillon, Read & Co., is reported as only typical of the generally increased business of the year to date.

Retail orders received by dealers during this week were 37 per cent higher than the same week in 1924 and established a new high record. All sections of the country are reported to have shared in these gains and export sales are reported to have increased more rapidly than domestic business. Deliveries of cars and trucks in both the domestic and export markets for the year to date show an increase of approximately 11,800 over the first quarter of 1924.

Despite the fact that production is now approximating 1,100 cars and trucks daily, the factory reports retail deliveries as running 100 cars a day ahead of this, and retail orders running 300 cars a day ahead of production.

Expect Spring Tourist Rush to Be Greater Than 1924

SALT LAKE CITY, April 4.—Preparations are already being made for the annual rush of tourists to the national parks this summer. Stephen T. Mather, director of the national parks service, says motor buses have been an important factor in popularizing the parks, and many of the bus fleets will be increased this year. Yellowstone park has bought ten more buses, which will bring this fleet to 315, of which 293 are buses and 22 trucks. Glacier park has bought eight more buses, bringing this fleet to 38.

A new bus fleet will be in operation at Zion National park in Utah. Buses will run from Cedar City, on the Union Pacific, to Cedar Breaks, Bryce canyon and Zion park. New hotels and cottages have been built for the accommodation of tourists. Additional buses will be used in the various other parks. Automotive establishments are preparing for the tourist business.

Mr. Mather has announced that 1,422,353 people visited the various parks last year, an increase of 11 per cent over 1923, and an even greater number is expected during 1925.

REVENUE PAYMENTS OFF

WASHINGTON, April 6.—Internal Revenue collections from the automotive industry for the month of February, 1925, amounted to \$7,279,300.94, which is \$2,577,062.07 less than the amount collected in February, 1924, when the total was \$9,856,363.01, it is announced here by the Bureau of Internal Revenue.

It is also shown that the collections from the automotive industry during the eight-month period from July 1, 1924, to Feb. 28, 1925, was only \$76,488,470.07, as compared with the collections of \$104,622,648.51 in the eight-month period from July 1, 1923, to Feb. 29, 1924, or a loss of \$28,134,178.44.

Demand Cores Return Under Armature Price Reduction

Delco and Remy Designs Offered at 30 to 50 Per Cent Under Former List

DETROIT, April 6.—Reduction of prices on factory built Delco and Remy armatures, now in effect, have been announced by United Motors Corp., the new prices, ranging 30 to 50 per cent under the former and being based upon the consideration that the old armature will be turned in by the purchaser. Price lists and discounts to dealers, service stations and garages will in the future be based upon this exchange consideration.

In announcing prices on this exchange basis the company declares that it established the policy as an inducement for the return of the core, thereby keeping the old armature out of the hands of rewinders. According to the company the new prices will greatly reduce the service charge on any electrical job where a new armature is needed.

Reduction in price on Klaxon horns is also made by United Motors, in connection with which the company is announcing a horn exchange plan, the intent of which is to avoid contrast as between service charges on horns and the new prices now announced. New prices range so low as compared to service prices that might be necessary in repairing the old horn, that the company feels it better to avert misunderstanding by urging the exchange of the old horn for a new one.

As an instance of the reductions, the former four dollar model now lists at \$2.24. Service stations may make a slight additional charge for detaching the old horn and installing the new. This new plan provides for a standard replacement price for each model of Klaxon horn by any authorized service station in the country.

McFarlan Advances Prices on All Open Single Valve Models

CONNEERSVILLE, Ind., April 1.—McFarlan Motor Corporation announces that prices of all open models in the single-valve series have been advanced \$50 and that the five and seven passenger sedans on this chassis have been advanced \$80. The five other closed models in this series have been subjected to reductions varying from \$20 to \$270. Four new types have been announced for this season: a coupe, brougham and two special sedans.

The list prices of the twin-valve series remains unchanged. A seven-passenger sedan at \$6,810 and a seven-passenger enclosed-drive sedan at \$7,110 have been added.

To Organize Ohio Dealers Under Unique N.A.D.A. Plan

**Body Replacing Old Association Will
Be Launched at Meeting
in Columbus**

COLUMBUS, O., April 4.—The Ohio Council of the National Automobile Dealers Association, which is expected to replace the Ohio Automotive Trade Association, is to be organized at a meeting in Columbus April 7. The plan of organization is unique and will be watched with considerable interest by dealers in all sections of the country.

The plan as outlined at a recent conference attended by prominent Ohio dealers and association heads and officers of the N. A. D. A., provides for organization of N. A. D. A. members in each city into chapters which will elect chairmen who will in turn make up the state council. Dealers in Cincinnati, Cleveland, Youngstown, Toledo, Akron and other cities have already indorsed the plan and a membership campaign will be launched shortly after the April 7 meeting to bring in chapters in the cities throughout the state.

Branch Office of N. A. D. A.

With the formation of the Ohio Council the National Automobile Dealers Association will establish a branch office in Columbus in charge of an assistant general manager.

The Ohio development is the first attempt to effect state organizations as units of the N. A. D. A. since the launching of the "One of a Thousand" campaign several years ago. Previous to that the work of organizing state associations had been slow and generally ineffective. By using the N. A. D. A. membership as the nucleus and building city chapters and state councils of them it is believed that an organization of exceptional unity and coherence will be assured.

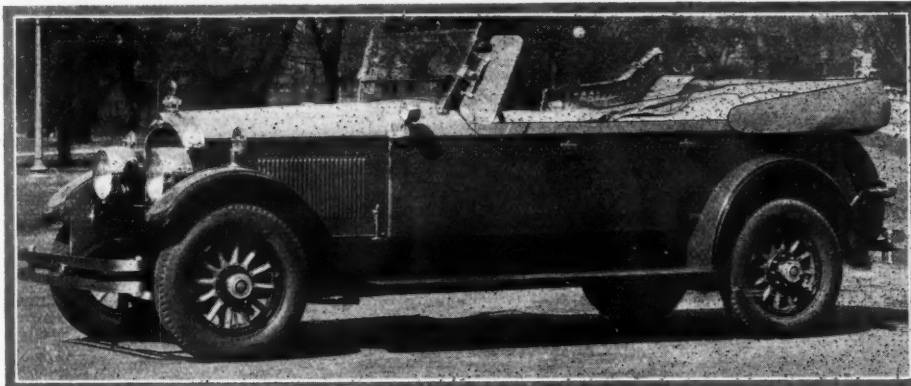
BUILDING CONTINUES IN DIXIE

ATLANTA, Ga., April 4.—The automotive industries in the southern states continued during February to maintain the remarkable record established in January in new construction, including for the most part new garages, and new buildings by dealer firms for use as showrooms and service stations. The total projects in February exceeded 200 as was the case during January. The first two months of the year marked a big increase over the corresponding months of last year, when one of the best records in the history of the industry was established.

SHOW SAVINGS WITH TRACTORS

WASHINGTON, April 6.—Savings of farmers throughout the United States in both money and time through use of tractors instead of horses is accentuated in a bulletin made public by the Bureau of Agricultural Economics of the Department of Agriculture. The bulletin covers the year ended March 31, 1924. Credit is given the National Automobile Cham-

Marmon Announces Club Phaeton



Marmon has just added a club phaeton for the spring and summer trade. The car is priced at \$3,490 and included in the equipment are two distinctive cowl lamps supported by nickel-plated brackets attached to a plated band extending around the rear edge of hood. Two rear-view mirrors are placed on the car, one being mounted on each front fender. There are two windshield wipers and decorative seat covers made of durable material also are included. The wheels are natural-wood finish.

ber of Commerce for some of the data it contains.

The fact is brought out that the cost of keeping horses on 286 selected farms overaged \$1,076 the farm while the cost of tractors for drawbar work averaged only \$341.

Interesting facts are set forth in a comparison of time required to haul with motor trucks and with wagons before the purchase of trucks. A half or three quarter ton truck, the bulletin says, can carry a load of 2,652 pounds over 16 miles in 1.7 hours while it will take a wagon 5.4 hours to carry 2,982 pounds over 14.2 miles.

Expect Record Volume of Travel on Lincoln Highway

WASHINGTON, April 6.—A greater volume than ever before of through travel across the continent on the Lincoln highway is expected this year, it was announced at the headquarters of the Lincoln Highway Association. Attention is called to the fact that \$8,481,078 was expended in 1924 in the construction and maintenance of the route from New York to San Francisco. Since the association was formed in 1913 a total of \$62,115,000 has been invested by the States and counties and by the Federal Government in the trans-continental highway.

Approximately \$15,000,000 will be spent within the next two and a half years, it is estimated, and when finally completed the highway, said to be the longest and most highly improved continuous route on the face of the earth, will represent an investment in excess of \$75,000,000.

FACTORY TO BE ENLARGED

SIOUX CITY, Ia., April 6.—The Albertson Co., Sioux City, Iowa, manufacturers of Sioux grinders and tools, will build a new addition to the factory according to announcement recently made by the president, O. Albertson.

Say Enforcement Is Needed More Than Traffic Law Flood

WASHINGTON, April 6.—Enforcement of existing laws and regulations relating to the motor vehicle and provision of adequate man-power to handle traffic congestion, rather than a quantity of new laws, is urged by the American Automobile Association as the first step in a practical safety program.

This appeal from the national headquarters of the A. A. A. is based on an investigation recently concluded by the Legislative Board of the Association of which Roy F. Britton, president of the Automobile Club of Missouri, is chairman.

The investigation, according to the board, confirmed the position taken by A. A. A. throughout, namely, that the principal trouble today is the lack of vigorous enforcement of existing laws and the deplorable extent to which civic authorities throughout the country have failed to provide sufficient traffic forces to handle the motor vehicle congestion and the many problems to which the automobile has given rise.

HEAVY CARBURETOR DEMAND

INDIANAPOLIS, April 4.—Night shifts have been started in several departments of the Wheeler-Schebler Carburetor Company's plant of this city which will bring production to the highest point for several years. Increasing demand for the new model S carburetor is the immediate cause of increased employment schedule. Carload shipments to motor car factories are being made regularly and the entire plant is running at greater capacity than before.

While the passenger car business of the company has increased greatly during the last year, due to the new type carburetor, other Schebler products have also made new production and sales marks.

Automotive Light Association Formally Organized at Chicago

**Committees Named to Carry Out
Program for 1925—Jesse T. Brown
Heads Board of Directors**

CHICAGO, April 6.—Organization of the Automotive Lighting Association was perfected here recently when representatives of 35 automotive lighting manufacturers held their first formal gathering, elected a board of directors and appointed different committees to carry out the association's program for the present year.

This association, which has for its purpose the promotion of any activity seeking the betterment of automotive lighting, is an outgrowth of the Spotlight Manufacturers' Association. Its first meeting was held here last November, at which time preliminary plans leading to the present organization were drawn.

To Nominate Officers

Jesse F. Brown of the S. & M. Lamp Co., Los Angeles, Cal., is chairman of the board of directors. C. C. Mortenson, Stover Signal Engineering Co., Racine, is vice-chairman, and W. S. Murtfeldt, National Lamp Works, General Electric Co., Cleveland, is secretary. Others on the board are T. K. Quinn, National Lamp Works, General Electric Co., Cleveland, and H. W. T. Collins, Cincinnati Victor Co., Cincinnati. The board was empowered to draw up a slate of officers which will be balloted on at the next meeting.

Five committees were appointed, on constitution and by-laws, legislation standardization, statistics and publicity. In some states temporary committees have been at work since November working in connection with technical societies in attempting to standardize automotive lighting laws and regulations.

Adopt Program

The program, adopted unanimously by the representatives, has seven separate points.

1. The Automotive Lighting Association has been organized to promote any activity which has as its objective the betterment of automotive lighting.

2. It endorses the accomplishments of the Society of Automotive Engineers, the Illuminating Engineering Society and the Bureau of Standards as related to automotive lighting problems.

3. This organization contemplates its function as national in scope, and its membership shall be represented by manufacturers of automotive lighting devices and the raw materials used therein.

4. We favor national standardization of automotive lighting regulations.

5. We oppose automotive lighting legislation restriction beyond the requirements of public safety.

6. We favor the consistent and proper enforcement of automotive lighting laws and regulations.

7. It is not the purpose of this association to restrict competition in any degree.

AWARDED LONGSTRETH MEDAL

DETROIT, April 4.—Daniel H. Meloche, metallurgist with the Holley Carburetor Co. of this city, was awarded the Edward Longstreth Medal by Franklin Institute of Philadelphia. This medal, which is awarded for the encouragement of invention and recognition of meritorious work in science and the industrial arts, was presented to Mr. Meloche in accordance with the certificate presented at the same time for "Improved Methods of Making Long Life Molds."

Mr. Meloche devised and perfected the process of pouring cast iron into permanent metal molds which is now in use at the Holley plant. At present piston castings, hydraulic brake cylinders, carburetor bodies and a variety of other parts are in production. A cast iron mold is coated with a refractory material and, as a part of the process, with amorphous carbon, and several molds are mounted on a continuously rotating turntable. The finished casting is free from the scale which is characteristic of sand-molded castings and has a very uniform structure that is free from blowholes. At the Ford plant 25,000 piston castings have been produced in one die before renewal was required.

Live Prospects Plentiful at Santa Ana Car Show

SANTA ANA, Cal., April 4.—Hampered by being close to Los Angeles and by a successful automobile show recently staged by the automobile dealers in that city, Santa Ana dealers stepped out recently and put on a show that was adjudged the most successful yet held in this community.

A tent covering half a city block was used and filled to capacity, over 50 exhibitors showing \$500,000 worth of cars. Fifty thousand persons visited the show and enabled the dealers to make a splendid record of sales.

One of the main features of the show was the appeal the different exhibitors made, showing the visitors that by buying at home they would get faster and better service besides forming an intimate acquaintance with the repairman. This point added materially in securing many prospects.

DEFRAUDS AUTOMOTIVE DEALERS

ALLENTOWN, Pa., April 6.—Word has been received that a number of automotive dealers and garages in the South have been defrauded by a man who represented himself as a salesman for the Bonney Forge and Tool Works. It is said that this man, using the name of R. C. Greeby, solicited orders for tools and collected a portion of the price, the balance to be paid on delivery. The Bonney Forge and Tool Works state that this man is not and never has been connected with them in any capacity, and any orders he has taken have never been sent in to the company.

Packard Earnings for First Half Fiscal Year Show Gain

**Increase As Shown in Figures Do
Not Reflect Actual Prosperity,
Says Macauley**

DETROIT, April 6.—Earnings of Packard Motor Car Co. for the six months ending Feb. 28, the first half of the company's fiscal year, were \$2,954,745. This compares with \$2,431,419 for the same period last year. Current assets were \$30,250,935 and current liabilities \$3,484,671. Company holdings of cash and securities totaled \$17,218,033. Inventories were \$8,606,110.

Referring to the company's showing for this six months' period, President Alvan Macauley said:

"Though the company's net earnings for the first six months are satisfactory, the figures do not reflect the actual prosperity. Orders are heavy, some closed models being sold up for four months in advance. Production is increasing steadily and the company is now turning out more cars than at any previous time in its history, all of which is in response to current demand.

"Unless something unusual and unexpected develops, the next six months will be considerably better than the first half of the company's fiscal year, indicating a favorable outlook for the twelve months' earnings."

Boosters Hold Banquet

BOSTON, April 4.—More than 100 Boosters attended the annual banquet held here in the Copley Square hotel. Earl W. Hennecke, president of the New York Boosters Club No. 13 and chairman of the International Board of Governors, headed a delegation of about 49 New York club members.

Martin Dewey, Jr., acted as master of ceremonies for No. 13 and led the New York delegation in singing. It was also through his efforts that "Selling the Jobber" was produced. He was assisted in the sketch by W. Ray Jesselson as office boy, Joe Grace as buyer and Art Cappel as Mr. Rositskey, hard-boiled salesman representing the Rear Seat Steering Wheel Co. of America. There were other entertainers.

Dan Tannen was chairman of the entertainment committee.

Speakers of the evening were President Dan G. Gaywood, New England No. 1, Earl V. Hennicke, president New York No. 13, Tom Wilson, first president of N. E. No. 1 and Chester I. Campbell, director of the Boston Automobile Show.

EMPLOYMENT GAINING

WASHINGTON, April 4.—Reports contained in the February Industrial Employment Bulletin of the U. S. Employment Service, just made public here, indicate that the employment condition in the automotive industry of the United States, for the most part, is on an upward trend and on a par with expectations for this period of the year.

Service Association Officials Are Hit by Federal Indictment

Chicago Men Are Said to Have Used Mails in Elaborate Scheme to Defraud Motorists

CHICAGO, April 6.—An indictment, containing six counts, has been returned in the federal court here against the Metropolitan Automobile Service Corporation of this city, four of its officials and employees on charges of using the mails to defraud.

Samuel D. Kennedy, Carl S. Wois, Fred L. Davis and Harry Lapin, the four indicted, are said to have defrauded 30,000 unsuspecting Chicago and nearby motorists out of \$1,200,000 since September, 1923, in a scheme involving automobile insurance and service.

Two Years for \$39.50

According to William F. Waugh, first assistant district attorney, who conducted the investigation, Kennedy and his associates through their company offered complete service and insurance for two years for \$39.50 and then failed to abide by their agreement. Of this amount, \$25 is said to have gone to the salesman securing the member.

Those joining the association were led to believe, Mr. Waugh said, that their accident insurance was applicable to all accidents and that their guarantee against theft covered all thefts. Closer scrutiny of the contract, after it had been received, showed that it applied only to personal injury and that the theft clause provided only for a limited search by a detective agency for the stolen article.

Offered Tow Service

Another "feature" the contract contained was the offer of free day and night tow service. This was to be done by garages who had been supposedly secured to do such work. An investigation by a number of the members who had been stranded and who had called the garages to which they had been referred to for towing revealed, it is asserted, that the garages had never heard of the association and had never been approached by any of the officials regarding such service.

Most of the association's members were secured from the foreign settlements of the city. The contract which was generally signed in a rush was not turned over to the member until it had been fully paid. Then it was sent through the mail. It was this mistake that led to the investigation by federal authorities and the subsequent indictment.

INCREASING BODY OUTPUT

KALAMAZOO, Mich., April 4.—Demand for sedan bodies has brought operations of the Limousine Body Company, of Kalamazoo, to about 60 per cent of the plant's normal capacity. According to J. D. Bobb, president, eight jobs are being handled daily at present, while the scale of production will be increased to 15 daily.

Woman Named Head Body Inspector

DETROIT, April 6.—Recognizing the importance of feminine influence in the selection of automobile purchases, Hupp Motor Car Corp. has named a woman, Mrs. Calista Conwell, to have charge of final body inspection. This includes the inspection of body finish, upholstery, body hardware and general car interior, the features which in the opinion of the company attract the greatest attention in womanly eyes.

Mrs. Conwell is in charge of from three to four hundred men, including about fifty inspectors, and is declared to be the first woman to hold such sweeping authority in the car manufacturing business.

H. M. Salisbury Is Appointed Nash Export Sales Manager

KENOSHA, Wis., April 6.—H. M. Salisbury, long a prominent figure in the export field of the automobile industry, has been appointed export sales manager of the Nash Motors Co. This announcement was made recently by E. H. McCarty, general sales manager of Nash Motors, at the company's offices here. Mr. Salisbury has already taken over active work in this department.

Coincident with the appointment of Mr. Salisbury, the announcement was made of the appointment of J. L. Todd as assistant sales export manager. Mr. Todd, who has been identified with the company since its organization, has for the past seven years been connected with this line of work.

Previous to joining Nash Motors Mr. Salisbury was export manager of the Maxwell Motor Sales Corporation, handling overseas merchandising for that company and the Chrysler Motor Corporation. During 1919 and 1920 he was acting vice-president of the John N. Willys Export Corporation of New York in active charge of sales.

Original Quantity Production of Gardners to Be Doubled

New Sixes and Eight-in-Lines Effected by Decision—\$5,000,000 to Be Spent for Parts

ST. LOUIS, April 6.—Plans for increasing the production of the new Gardner six and the new Gardner eight-in-line to double the quantity production originally planned for the first six months of the present year have been authorized by the board of directors.

To accomplish this production the directors also authorized the spending of \$5,000,000 which it is estimated will be necessary to purchase the various parts in carrying out the contemplated program.

Finances of the company have never been in better shape than at the present time. The financial report read at the recent stockholders meeting in New York city, showed that the company has more than \$500,000 in cash in the bank with no bank loans or outstanding debts and with current assets twenty times more than current liabilities.

Only one change was recorded at the election of directors, Thomas R. Reyburn of this city being elected to the board. The other members were re-elected, including Russell E. Gardner, chairman of the board, Russell E. Gardner, Jr., Fred W. Gardner, Ralph Hornblower, Oliver J. Anderson and Walter H. Yeldell.

MORE BRITISH PRICE CUTTING

WASHINGTON, April 4.—British automotive sales in February were retarded by bad weather and were below average, according to cable advices to the Department of Commerce just made public here.

Price reductions were again made by a number of British manufacturers and several importers continue to press for relief from high motor car taxation. Registration figures for 1924 show an increase of 91,723 over the previous year. Light car manufacturers are fully engaged, heavy type fairly stationary. A better tone generally is reflected in the annual reports of companies.

Automotive Business in Chicago and Cook County Shows Progress for First Quarter

CHICAGO, April 6.—The sane, sensible business methods adopted by Cook county automobile dealers and distributors the first of the year helped the business materially to get its feet on the ground during the last three months.

This statement by E. S. Price, of the Central Auto Finance Company of this city, follows a comparison of the association business for the quarter just ended as compared to the corresponding period in 1924.

In the period ending with April, the chattel mortgages filed by members of the association were 11,607 or approxi-

mately 2,000 more than last year. A majority of the mortgages were on second hand cars with an increasing demand for new automobiles as the quarter advanced.

Throughout the entire three months, the dealers and distributors, Mr. Price said, realized conditions as they were and not as they would like to have them be and met them on the basis as they would in any other line of business. Shutting their eyes to conditions as has been done in past years was avoided with the result that a steady flow of business can be expected for some time.

Running Affairs of Pittsburgh Trade Association



Left to Right—H. N. Dunbar, treasurer; Edgar D. McKean, president; H. F. Gleason, vice president; W. N. Owings, secretary.

PITTSBURGH, Pa., April 6.—The Pittsburgh Automobile Dealers' Association has elected Edgar D. McKean as its president for the coming year. Mr. McKean was vice president during the past year and has served on many important committees.

H. F. Gleason was elected first vice president and J. E. Lowe second vice president. H. N. Dunbar, treasurer, and W. N. Owings, secretary, were re-elected. The following directors were elected: J. C. Kuhn, F. L. Dennis, F. E. Bishop, R. R. McVicker, F. D. Saupp, and G. A. Hoeveler. In addition to these, the five officers named above are ex-officio members of the board.

The new administration will have its work cut out for it since Pittsburgh will be the scene of the annual convention of the Pennsylvania Automotive Association to be held October 12, 13 and 14 this year. The new officers have already begun their preparations for the event. Arrangements at present are in the hands of W. N. Owings, secretary, who maintains headquarters at 801 Highland Building, Pittsburgh, Pa.

Advantages in New Parcel Service for Equipment Plants

WASHINGTON, April 6.—Accessory and parts automobile manufacturers will be interested in a "special handling" and "special delivery" parcel post service authorized by the act of Feb. 28 and being inaugurated by the Post Office Department.

The "special handling" of parcel post means speeding up the service en route on the trains, etc. While "special delivery" means speeding up the service after its arrival. It requires both services and both stamps to obtain the best and speediest mail service possible.

A "special handling" stamp for parcel post costs 25 cents, while a special delivery stamp for parcel post up to and including two pounds costs 10 cents, up to and including 10 pounds costs 15 cents, and thence up to the limit of weight of parcel post 20 cents. Add the special handling, 25 cents, to the special delivery, 10 cents, 15 cents and 20 cents, and one has the very best service possible for any article of parcel post.

STUTZ EXPANSION CONTINUES

INDIANAPOLIS, April 6.—The Stutz Motor Car Company continues to expand its merchandising organization and R. A. Rawson, merchandising manager announces the appointment of two additions to his staff; V. D. Fitzgibbon, former city editor of the Muncie Star, has been made Advertising Service Manager and E. W. Headington, former New York branch manager for Haynes, has been appointed Stutz Branch Manager of New York City.

Two new distributors have also been

appointed. The Russell Electric Car Company of Kansas has been given the Kansas City territory which includes western Missouri and the State of Kansas, while the Baughman Motor Car Company of Akron, Ohio, has been made distributor for that territory.

CONDUCT FACTORY TOURS

KENOSHA, Wis., April 4.—The Greiner-Nash company, Nash representative for Southeastern Wisconsin, is undertaking weekly tours through the Nash Motors company plant here. These tours are guided by members of the sales force of the company and their invitation is extended to all persons whether prospective car purchasers or not. The crowd is taken through the plant on Tuesday afternoons and shown the many processes through which a Nash car goes in the course of manufacture. The Greiner-Nash company reports that it gives present Nash owners a better conception of what is in their car and how it is made, and it has paved the way for many a prospect.

DALLAS TO STAGE BIG RACE

DALLAS, Texas, April 6.—Some of the leading automobile racing men in the game will be seen in a 100 mile race here on April 11 for a purse of \$25,000. The races will be run on the Fair Park course under the auspices of the A. A. A. The Fair Park track is a circular affair 1¼ miles long. Among the racers to be in the sweepstake are Ralph DePalma, Earl Cooper, Bennett Hill, Earle Devore, Dave Lewis and Frank Lockhart. These racers have just finished an event at Los Angeles and have shipped their cars here for the contest.

Substantial Improvements in Industries of Alliance

ALLIANCE, O., April 6.—Substantial improvement in Alliance industries, ninety per cent of which are contributing to automotive manufacture, was reported following a survey.

The Alliance Machine Company and its two allied companies the Machined Steel Castings and the Alliance Structural have received several large orders, that will insure steady operation until fall, officials said.

The Woods Engineering Company devoting its entire plant to the manufacture of the Morrison jack is operating in full with day and night shifts. This concern supplies jacks for many of the leading automobile makes.

Transue Williams, one of the largest plants here making automobile steel castings is slowly picking up, but orders are not sufficient to insure a normal payroll.

The jack department of the Buckeye Jack Manufacturing Company is working much better but the foundry is still idle. The Buckeye Twist Drill Co., is working below normal.

KLEIBER PLANT OPERATING

SAN FRANCISCO, April 4.—Production of passenger cars has commenced at the recently completed factory of the Kleiber Motor Car Co. in this city. The new plant was opened officially by Mayor James Rolph who "worked" on the first car turned out. Officials of the company are Paul Kleiber, president; Louis Lagomarsine, assistant general manager; D. A. Coplin, financial manager; H. B. Wood, sales manager.

Cliff Durant Vetoes Retirement From Races—Will Drive at Indianapolis

INDIANAPOLIS, Ind., April 6.—Cliff Durant, millionaire racing driver, who sold his \$25,000 racing automobile—the most expensive speedster in the world—for a song last June after an unsuccessful competition in the Indianapolis race and announced his retirement from the speeding sport in which he has been a famous patron for many years, is coming back to the track.

He has entered a car in the 500-mile race which will be held at the Indianapolis Motor Speedway, May 30.

Durant is the first owner to enter a mount in the thirteenth annual contest at the Indianapolis speed course and his car will be known as No. 1, when it rolls to the tape on the day of the race. He

would give no details of the car which he will drive in the coming race, although reports are to the effect that a certain little machine shop in a Western city has been a busy place for many months, with workmen designing and planning Durant's mount behind more or less closed doors.

Durant will be one of the first pilots to arrive at the Indianapolis track for the start of the training season, an announcement accompanying his entry stated.

The advance sale is more than 50 per cent ahead of last year's record, which was a record for advance buying of tickets at the speedway, according to T. E. Myers, general manager of the Speedway.

Harvard Bureau Completes Second A. E. A. Cost Survey

CHICAGO, April 4.—The second survey of the Harvard Bureau of Business Research being conducted under the authorization of the Automotive Equipment Association to determine the cost of doing business in the automotive jobbing field was closed this week. Complete response to questionnaires sent out by the Harvard Bureau was made by 151 jobbers who are members of the A. E. A. as compared with responses from 128 last year.

The information is to be compiled by the Harvard Bureau and the report will be ready for distribution at the Summer Convention of the A. E. A. at Colorado Springs in June.

The questionnaires sent out this year were much more complete than those used last year, so that the result is expected to present a much more detailed picture of the business problems of the jobbing trade than was shown by last year's survey.

Cadillac Executive Looks for 1925 to Be Banner Year

INDIANAPOLIS, April 6.—Vice-president Earle C. Howard of the Cadillac Motor Car Company visited Indianapolis for a day of conferences with the Burke Cadillac Company, Cadillac distributor for Indiana, and with the dealers operating in this territory. In the evening the visit and conference included a dinner for Cadillac dealers of Indiana, and from a part of Illinois with Harry S. Burke, president of the Burke Cadillac Company, as host.

Mr. Howard told the dealers that as a result of a series of conferences with dealers and bankers throughout the country in the last few weeks he expects the year of 1925 to be a banner one for the automobile industry and trade. This success, will come with due consideration of operating expenses and a sane procedure of individual dealers.

S. A. MILES ON EUROPEAN TRIP

NEW YORK, April 4.—S. A. Miles, show manager of the National Automobile Chamber of Commerce, has sailed for Europe. Whereas in former years his annual trip has been mostly for pleasure, it is expected that the foreign activities of the N. A. C. C. will occupy part of his time while on the Continent and in Great Britain.

BUILDING 7-STORY GARAGE

NEW ORLEANS, April 4.—Actual construction of the seven-story garage on Iberville street has begun, and it is expected that the building will be opened by the middle of October. It will house 600 cars without blocking or double parking, and in addition will have space for a garage and stores on the ground floor.

To make certain quick and efficient service, a perpendicular escalator, continuously operating, will be in use to carry employes from floor to floor; an automatic compressed air machine will be on every floor for tire inflation; greasing racks, pneumatic washing machines and other late devices to insure the best service will be installed.

There will be no stairway or car elevators, interfloor traffic being escalator, passenger elevator and ramps.

Over 105,000 Cars Produced By Great Britain Last Year

WASHINGTON, April 6.—The Department of Commerce is advised that an estimate of the British passenger car production for the year 1924, based on registration returns as well as import and export statistics, is near completion and will be shortly published. While awaiting the complete details of this estimate preliminary figures are given which show that between 105,000 and 110,000 passenger cars, exclusive of assembled machines, were produced in Great Britain last year.

General Accessory Business in Indiana Shows Improvement

Surrounding Territory Trade Also Picks Up; Gain Is 15 to 30 Per Cent for Past Three Months

INDIANAPOLIS, April 4. — General accessory business in Indiana and surrounding states is picking up, according to reports of the large wholesale accessory houses of this city. The gain in sales against the first three months of last year averaging from fifteen to thirty per cent. The wholesale houses which carry radios report greatest increases, one such house for the last five months reports its business at least thirty-five per cent better than in similar period last year. But even those houses which do not carry radio show gains of from ten to fifteen and even to twenty per cent.

Some of the firms that started in recent years as specialty jobbers have expanded into a general wholesale trade and show appreciable gains for the past three months. The most important houses in the size of the trade they do have made their gains without expanding their territories, though by far the larger number of local wholesalers obtain the greater part of their business from Indiana and near parts of Ohio and Illinois.

The general gain for this season began early in January but some wholesalers report a real spurt which started three weeks ago. One concern which does important tire business showed gains three-fourths of which are from the tire end, though the general jobbing business of the concern is expanding steadily.

A. A. A. Secretaries to Hold Convention in Washington

WASHINGTON, April 6.—A total of from 350 to 400 secretaries from all over the United States have signified their intention of attending the convention of American Automobile Association club secretaries to be held here, April 30-May 1.

This will be the first secretaries' conference since the amalgamation of the National Motorists' Association with the American Automobile Association.

One of the outstanding features on the agenda of the convention is the formulation of a touring program for 1925. In view of the tremendous increase of long-distance touring and the fact that Three A. secretaries route 2,000,000 tourists a year, this feature is regarded as one of the most vital from the viewpoint of automobile owners and also from the standpoint of the service of the National Organization.

Another important subject that will be taken up is the question of street and highway safety.

German Industry Aroused Over Ford Invasion Prospect

Plants Preparing for New Brand of Competition Upon Raising Import Embargo

WASHINGTON, April 6.—The German automobile industry, now that there is every prospect of lifting of the import embargo, is thoroughly aroused over the impending invasion in its territory of Henry Ford, with his extensive and technically superior plants, it is confided here in a survey of the problems of the German automotive industry contained in an issue of the Labor Review made public by the U. S. Department of Labor.

"To meet the prospective foreign competition," says the review, "the German plants will have to organize closely. The combine of the two leading works, Daimler and Benz, can therefore be looked upon as the beginning of extensive concentration. As in other industries, a strong and close dealers' organization has been formed in the German automobile industry, which is greatly interested in the import of automobiles and this way make difficult the situation of German automobile plants which have no sales organization of their own. The future will show to what extent the independent interests will come to an agreement among themselves."

New Orleans Automobile Show Rules Against Freak Models

NEW ORLEANS, La., April 4.—Entry rules for the seventh annual automobile fashion show of the Elks to be held at the Fair Grounds in New Orleans, Easter Sunday have been completed by the committee in charge.

Freak models will be barred from the competition, and only stock models will be allowed, of such design that they can be taken from the show to the display room for sale. The committee of judges will determine whether an entrant is "freakish."

George W. Stem, of the New Orleans Chevrolet Sales company, pledged the cooperation of the dealers and thanked the Elks for the opportunity of putting their models on display.

FRANCHISED BY GARDNER

ST. LOUIS, Mo., April 6.—Gardner Motor Car Co., Inc., recently has added new dealers and distributors as follows:

Jenson-Johnson Motor Co., Great Falls, Mont., The Tuscarawas Motor Car Co., New Philadelphia, O., Knudson Garage, Austin, Minn., J. W. Nolan (distributor), Syracuse, N. Y., C. H. Bennett, Jr., Newark, Essex Co., N. J., Snyder Auto Co., Canton, O., Perrott Motor Sales, Beaver Falls, Pa., Pacific Lexington Co., San Francisco, Cal., Southwest Motors (distributor), 901 West 7th St., Los Angeles, Cal., Messrs. Mansfield & Smith (distributor), 2050 Van Ness Ave., San Francisco, Cal., Hub Garage, 1663 Market St., San Francisco, Cal., Sacramento Motors Co., Sacramento, Cal., J. V. Basta Motor Sales, 11905 Miles Ave., Cleveland, O., Summers Motor Co., Benton,

Another Nomination for Cheek Medal

WASHINGTON, April 8.—A monopoly in automobile rescue work is sought by an automobile individual in Peru, according to advices received by the Automotive Division of the U. S. Department of Commerce.

The applicant for the monopoly desires to secure exclusive rights for 10 years to assist automobiles, motor trucks and wagons which break down on any of the streets or public highways of the Lima-Calleso district.

Under the arrangement he proposes, any motorist who became "stalled" would be compelled to send for him to tow the machine home, it being prohibited to call for anyone else for assistance.

No action has yet been taken upon the application, the dispatch states in conclusion.

Ill., Ferguson Motor Sales, Erie, Pa., Stitzle & Hyde, Brazil, Ind., Ray Auto Co., Ray, Minn., Broadway Garage, Yankton, S. Dak., Allouez Garage, Superior, Wis., Betteley & Arner, East Liverpool, O., The North Asbury Garage, Asbury Park, N. J., A. & B. Garage, Middletown, Orange Co., N. J., Motor Sales & Service Co., Campton, N. H., John E. A. Keyes, Hudson, Mass., Louis S. Richard, Woonsocket, R. I., Hertzog Motor Co. (distributor), 1184 Main St., Buffalo, N. Y., Harrison Motor Sales, 3249-59 W. Harrison St., Chicago, Ill., H. M. Maire, Troy, Mo., Norman T. Reardon, Oil City, Pa., Somerville Motor Mart, Inc., Somerville, Mass., A. E. Arney Co., International Falls, Minn., Thomas F. Kezar, Sanford, Me., J. H. Buell, Jr., New London, Conn., Southwest Motors, Phoenix, Ariz., Shelton Motor Co., 5802 Delmar Blvd., St. Louis, Mo., J. R. Jagow, Holly, Colo., Steinbring Bros., Hancock, Minn., Hampson-Board Motor Co., 2515 Michigan Ave., Chicago, Ill., Tilton-Gardner Motor Co., 2920 Locust St., St. Louis, Mo., Edw. L. Arnold Motors (distributor), 1210 N. Broad St., Philadelphia, Pa., Barth-Goedhart Co. (distributor), Sioux City, Ia., Del Mar Motor Co., Phoenix, Ariz., Harley E. Stone, Redondo Beach, Cal., John R. Fox & Co., Grove Ave. & Fingerboard Rd., Grassmere, S. I., N. Y., C. D. Singleton, San Jose, Cal., B. & C. Motor Co., Inc., Phillipsburg, N. J., Fletcher & Johnson, Prescott, Ariz.

TRYING PYROXYLYN WINDOWS

WILMINGTON, Del., April 6.—Developments looking to the use of a pyroxlyn material for outside windows, tail light and division windows in taxicabs are under way at the plant of the E. I. du Pont de Nemours & Co. It is stated that one taxicab company recently has equipped its cabs with this material. One advantage is said to be less likelihood of injury to passengers from broken glass in case of accident. The pyroxlyn material is said to be nonshatterable and bullet proof.

OFFER AUTOMOTIVE COURSE

BOSTON, April 4.—Massachusetts Institute of Technology is now offering a graduate course in automotive engineering leading to a degree of Master of Science.

Harry Clendenin Will Head Carolina Trade Association

Help of Attorney General Will Be Asked in Abolishing Speedtraps and Arrests By Mail

CHARLOTTE, N. C., April 4.—Election of officers, formulation of plans for 1925 and reports on progress for the past year featured the joint convention of the Carolina Automotive Trade Association, and the Carolina Motor Club, held here recently.

Those elected by the association follow: President, Harry Clendenin; vice president, Henry Page; vice presidents elected from the nine sections of the state were E. C. Sawyer, H. E. Merritt, Henry Masten, Tom Glasgow, George E. Wilson, William Boylan, S. G. McMillen, J. R. Rainse and N. E. Riddick. C. S. Wallace, of Moorhead City, was elected president of the Carolina Motor Club.

Abolition of speedtraps and placing of correct signs concerning speed limits on the highways and cities were advocated in two resolutions which were passed. In the abolition of speedtraps, the attorney general will be asked to take some action which will eventually lead to their abolition. His aid also will be sought in doing away with the policy of arrest by mail.

In placing signs regarding speed limits, the association favors those which tell definitely just what the limit is for the particular section which the motorist has just entered or those which would give in detail just what speed can be maintained in various parts of the city or highways.

Year Ending Feb. 1 Produces Better Sales in Frisco Zone

SAN FRANCISCO, Cal., April 6.—Figures just released by the State Motor Vehicle Department show an increase of 11,855 automotive vehicles sold in this district, central California, for the year from Feb. 1, 1924 to Feb. 1, 1925, over those of the same twelve months of 1923-24.

The dealers consider the fact of sales decreases being shown in only two counties, and those in the heart of the mountainous section, where paved highways are not plentiful and population sparse, as a better condition than was expected in the fall of last year. Plentiful rains throughout this region within the past three months, when more than two feet of rain fell, have brought the dealers of San Francisco and Oakland to the belief that 1925 will show a considerable improvement in sales over 1924.

GOLDSBORO SHOW MAY 4-9

GOLDSBORO, N. C., April 6.—The Chamber of Commerce has announced that the sixth annual Automobile and Industrial Show will be held here May 4-9. W. C. Denmark, manager, asserts that over 100 products will be displayed.

February's Registrations of New Cars Drop in Two States

Slump in Indiana and Illinois Probably Attributable to January's Deferred Recording

CHICAGO, April 6.—Registration of new passenger cars in Illinois and Indiana during February dropped 16 per cent as compared with the previous month. The greatest loss in Illinois was in the low priced class (excl. Fords), and high priced vehicles, which showed a falling off of 24 per cent each. In Indiana Fords were the hardest hit with 17 per cent. The decline probably is attributable to the fact that in January there was a large registration by owners who had deferred that formality until after the first of the year.

The following table shows the percentage changes for February as against January:

Illinois	
	Per Cent Decrease
Fords	15
Low, excl. Fords.....	24
Medium	13
High	24
Total	16
Indiana	
	Per Cent Decrease
Fords	17
Low, excl. Fords.....	12
Medium	11
High	11
Total	16

Following are the detailed figures:

Illinois					
Low excl.					
Month	Fords	Fords	Medium	High*	Total
Jan....	4,060	2,275	5,748	808	12,891
Feb....	3,424	1,718	4,977	612	10,731
Total	7,484	3,993	10,725	1,420	23,622
Indiana					
Low excl.					
Month	Fords	Fords	Medium	High*	Total
Jan....	4,239	1,024	1,837	117	7,217
Feb....	3,515	896	1,533	103	6,047
Total	7,754	1,920	3,370	220	13,264

*Includes miscellaneous cars not named.

The foregoing figures were compiled from data furnished to MOTOR AGE by Robinson's Advertising Service, Springfield, Ill., and Indianapolis Auto Trade Association, Indianapolis, Ind.

Southern Hardwood Sales to Body Plants Drop Slightly

ATLANTA, Ga., April 6.—Contrary to the expectations of the lumber industries in the Southeast hardwood sales to the automobile body manufacturers have failed to maintain the gains noted three or four weeks ago, and though buying is still on a fairly respectable basis, orders

Hurt in Hubby's Car; Wife Collects

HARTFORD, Conn., April 4.—For the first time in the history of the state a superior court jury has awarded a wife damages against her husband for injuries received in his car. The jury brought in a verdict of \$2,000 damages for Mrs. Inez Bushnell of Thompsonville, against her husband, Mark W. Bushnell.

The wife sued for \$5,000 damages as a result of injuries she received when her husband fell asleep while driving his car. Mrs. Bushnell had also fallen asleep and was hurled through the windshield when the car struck a tree and knew nothing of the mishap until she recovered consciousness some time later.

are considerably less than manufacturers had counted upon as a result of the heavy inquiries received from the automotive manufacturers during January and the early part of February.

Also, there has been an appreciable falling off recently in inquiries, with both inquiries and orders running at present somewhat below the volume of business being placed by the body makers at this time last year. There is every indication, however, that the present lull is only temporary, and that spring will witness a considerable revival in the hardwood demand from the source.

BIG DEMAND FOR RACE SEATS

INDIANAPOLIS, April 6.—Seat sales for the May 30 race is farther ahead at this time than in any previous year, according to T. I. (Pop) Meyers, general manager of the Indianapolis Motor Speedway. Practically the entire grand stand "A" is "gone" and sales of other choice locations has been much better than in previous advance seat sales. More than half of all the seats has been sold. News that foreign competitors will drive in the classic has stimulated interest of fans.

REO EXPORTS DOUBLE

LANSING, April 6.—Reo Motor Car Co. reports the first six months of its fiscal year, dating from Sept. 1, as showing export shipments doubling the total for the same period a year ago. Territories mentioned by the company as showing the largest volume of business are Europe, South and Central America and the West Indies, Australia and Africa. Dealerships established in India are just getting into operation.

Because of the increase in export business the Reo Motor company has been compelled to expand its export quarters at the factory, and it is laying these out on a scale comparable with the importance that this department has assumed.

General Motors Figures Show Trend of Closed Car Sales

Report 53 Per Cent Ratio First Quarter of Year Against 28 for 1922

NEW YORK, April 6.—The trend in closed car sales compared with open car sales is shown in figures given out by the General Motors Corporation. In 1924, the figures reveal, General Motors closed car sales were 43 per cent of the total sales of the company. This compares with 37 per cent in 1923 and 28 per cent in 1922. For the first three months of 1925 closed car sales are estimated at approximately 53 per cent compared with 39 per cent a year ago.

While the recent marked demand for popular-priced coaches has emphasized the trend of public taste toward closed cars, an analysis of General Motors sales shows that open models have been losing their dominating place gradually over an extended period, and all closed car models have shared the business thus diverted.

The percentage of closed cars to total cars sold by General Motors by months, over a period of three years, follows:

	P. C. 1924	P. C. 1923	P. C. 1922
January	42	34	29
February	38	35	29
March	38	36	25
April	42	40	22
May	41	38	19
June	37	35	26
July	37	31	26
August	40	30	31
September	42	35	37
October	52	38	24
November	71	42	30
December	68	44	39
For the year	43	37	28

This comparison includes Chevrolet, Oldsmobile, Oakland, Buick and Cadillac, so the figures are representative of practically all price classes.

Locomobile Raises Prices on 48 Series \$50 to \$60

BRIDGEPORT, April 4.—An advance in price of the Locomobile Series-48 ranging from \$50 to \$60, has been made by the Locomobile Company of America. The increase is occasioned by the fitting of 35 x 6.75 balloon tires in place of the 35 x 5 high pressure cords formerly used, it is stated.

The following schedule shows the old and new prices:

	Old Price	New Price
4-pass. Sportif Touring.....	\$ 7400	\$ 7460
7-pass. Touring.....	7400	7460
5-pass. Victoria Sedan.....	9990	10050
7-pass. Brougham	9990	10040
7-pass. Encl. Drive Lim..	9990	10050
7-pass. Cabriolet.....	10250	10300

JOINS TURNER STAFF

KOKOMO, Ind., April 4.—Chester Thorne, formerly representative of the Turner Manufacturing Co., of this city, in Texas and Arizona, has joined the official staff of the company here as secretary.



Along Automobile Row



BRIDGEPORT, Conn.—Gaylord A. Hoyt has been appointed general sales manager of the Locomobile Co. of America, Inc., according to an announcement made public here by George E. Daniels, vice-president and general manager. Mr. Hoyt was formerly with the H. H. Franklin Mfg. Co. as assistant sales manager.

JOLIET, Ill.—C. W. Nickey, assistant salesmanager, J. W. Bemoise and Oscar Moll of the Chicago Chevrolet Co. addressed 40 salesmen and employees of the Henneberry Motor Sales Co. at a banquet. A. Arthur, salesmanager of the Henneberry company, also spoke. Sales and service promotion plans were topics of the talks.

DAYTON, O.—The Allied Auto Parts Co. has been incorporated with a \$20,000 capital by C. Forster Hahne, Flora M. Hahne, Josephine A. Hahne, William J. Meyer and John A. Kappeler to deal in automobiles and accessories.

SPRINGFIELD, Ill.—The Mosely Motor Co., 216-222 North Seventh street, after July 1 will occupy a new building being built at Monroe and Second streets. It will cost \$15,000. The new structure will be three stories and with a frontage of 75 feet. The company distributes Ford and Lincoln cars and Fordson tractors.

OAKLAND, Cal.—The Edward Lower Motors Co., Lincoln sales and service, of San Francisco, has purchased the interests and establishment of the H. M. Lawrence Co., Lincoln sales and service in Oakland. Leonard V. Hatton, present salesmanager for the San Francisco company, will become general salesmanager at both San Francisco and Oakland.

OTTUMWA, Ia.—D. B. Davis, who several months ago sold the Davis Auto Co., 224-230 West Second street, Ottumwa, to the Griefen-Buick Co., has taken charge of the company and operates it under the previous name. Mr. Davis has the Buick agency in eight adjoining counties.

TOLEDO, O.—Papers have been filed with the Secretary of State chartering the Toledo Timer Co., 3100 Monroe street, with a capital of \$10,000, to manufacture and sell accessories. Incorporators are Louis A. Alexander, L. C. Crabbs, C. H. Kuhlman, L. C. Kroncke and George W. Fluckey.

ROCKINGHAM, N. C.—Hudson-Essex Sales Co., Inc., is a new firm in Rockingham which is capitalized at \$25,000.

SAN FRANCISCO.—The H. O. Harrison Co., Hudson-Essex distributors for this territory, announces appointment of A. L. King, formerly secretary and auditor for the Harrison firm, as Hudson-Essex agent for Alameda, on the mainland side of San Francisco Bay. Mr. King will be succeeded in the Harrison financial department by W. J. Driscoll, who comes over from Hamill and Wichman, Hudson-Essex dealers in Oakland.

PEORIA, Ill.—The Pinnell Auto Supply Co., 515 Franklin street, Peoria, has opened a branch accessory and parts store at 2101 Main street. Baumont Pfeidder is manager of the Main street store. Fred W. Meuser, partner in the company since the business was launched a year ago, is to become active in its management.

PORTLAND, Ore.—Granning and Treece, automobile dealers, now at 416 Hawthorne avenue, have leased the 100x100 building at the northeast corner of East Broadway and Third streets for two years. Extensive alterations are being made on the building and a branch salesroom will be opened there.

MONTREAL, Canada.—In order to adequately take care of increasing business brought by the new Willys-Overland line the Willys-Overland Sales Co., Ltd., this city, has opened its second floor as a used-car display room. This room will be devoted entirely to guaranteed used cars.

GENEVA, Ill.—F. Robert Kremer, Geneva, automobile dealer and widely known in the trade in that section of the state, has taken the Studebaker agency in Geneva, Batavia and St. Charles.

INDIANAPOLIS.—Col. E. S. Gorrell, vice-president of the Nordyke and Marmon Co., Indianapolis, is making an ex-

tensive trip through the west during which he will visit Marmon dealers and distributors in various cities. Col. Gorrell, who has supervision of the sales and service divisions of the Nordyke and Marmon Co., will speak at numerous meetings of salesmen and service men in Marmon dealer establishments throughout the west.

CANTON, O.—S. J. Dotson, formerly an Akron tire dealer, is now a Reo dealer in Canton.

BALTIMORE.—Maryland Flint Co., Baltimore, has moved into a new building but is maintaining the former quarters as a service station.

LOS ANGELES.—Lyn C. Buxton has been appointed dealer in Los Angeles for Overland and Willys-Knight. He will continue handling the Stearns car.

LOUISVILLE, Ky.—The Bunting Motor Co., 950 South Third street, Louisville, Ky., has acquired the Studebaker franchise in this territory. C. S. Bunting is head of the concern which moved here from Newport News, Va., where it also handled Studebaker. Most of the Bunting organization has moved to Louisville. Studebaker was without a dealer here for several months.

KIRKSVILLE, Mo.—Tritt Brothers, Kirksville, Mo., have purchased the business of the Sands Motor Co. of that city and will continue the Nash franchise.

NEW YORK.—W. B. Marsh, who was formerly general service manager for the Locomobile company, has been made service manager of the Wills Sainte Claire Co. of New York.

OTTAWA, O.—The Putnam County Motor Sales Co. has been chartered with an authorized capital of \$10,000 to buy and sell automobiles, trucks and accessories. Incorporators are A. L. Kahle, George W. Kahle, H. P. Eastman, A. C. Fischer and Charles F. Heckman.

FREEPORT, Ill.—C. A. Haller, late of Harvard, Ill., has organized the Freeport Hudson-Essex Co. and opened a sales agency at 15 North Van Buren street. He will distribute Hudson and Essex cars in the Stephenson County territory.

CHICAGO.—Armature-rewinding prices have recently been reduced by the U. S. Auto Supply Co. of Chicago. These prices are now quoted net to the dealer instead of at the retail list from which a discount is allowed, as formerly. This company carries a stock of between 8,000 and 12,000 rewind armatures of all kinds for quick exchange.

BOSTON.—W. H. Yeager has joined the sales organization of the Wills Sainte Claire Co. of New England at Boston. Mr. Yeager has had years of experience in the automobile business, for the last six years having conducted his own business.

NEW YORK.—J. R. Hughes has been appointed retail salesmanager of the Wills Sainte Claire Co. of New York. Mr. Hughes has been in the sales department of this organization for the past four years.

SALT LAKE CITY.—The City Motor Sales Co. of Salt Lake City, in business for the past few months as a Ford and Lincoln agency, had a formal opening recently. There was dancing, music and refreshments. The building occupied by the company cost \$30,000.

ATLANTA, Ga.—The Rollin Motor Co. announces the appointment of the Franklin Motor Car Co. of Atlanta as Rollin distributor in the Georgia territory. The company will continue also to handle the Franklin line in Georgia, according to S. B. Dodge, manager.

AKRON, O.—The Superior Auto Towing and Service Co., 923 Hazel street, has been chartered with a capital of \$10,000 to do a general repair business and deal in automobiles. Fred J. Anderson, Dyle M. Ziegler, Helem M. Ziegler, Nellie E. Anderson and Duane W. Anderson are the incorporators.

BURLINGTON, Ia.—The Motorist Supply Co., operating accessory and parts

stores in Peoria, Bloomington, Decatur and Galesburg, Ill., has opened a branch at 616 Jefferson street, Burlington, Ia., with Clarence B. De Vine, well-known accessory man, as local manager.

MOOSE JAW, Sask.—The Maxwell Chrysler Motor Co. of Canada, Ltd., announces appointment of Gray-Campbell, Ltd., of this city, as distributor for the southwestern district.

MOLINE, Ill.—F. E. Bradfield, vice-president of the Velie Motors Corporation, Moline, Ill., has returned from visits to automobile shows, visiting New York, Philadelphia, Washington, Cleveland, Louisville, Des Moines, Denver, Omaha.

HARTFORD, Conn.—The General Tire Service Co., Hartford, Conn., succeeds the Tire Service Co., at the same address, 48 Chapel street. J. T. Shay is president and general manager of the new organization which will retail the General tire.

SPRINGFIELD, Ill.—Arthur E. Mullen, formerly with the Studebaker Corporation in South Bend, Ind., and recently with the Weber Implement and Automobile Co., St. Louis Studebaker dealer, has been made salesmanager of the Lowell T. Sudduth Co., 305-307 South Fourth street, Springfield, Ill.

CLEVELAND, O.—The Cooksey Oldsmobile Co., 3800 Euclid avenue, has been chartered with an authorized capital of \$10,000 to deal in automobile accessories. Ralph W. Jeremish, N. Graham, J. Rogers Hewett, John P. Cavano and Orville J. McKibben are the incorporators.

SCRANTON, Pa.—The Maccar Truck Co. of Scranton announces appointment of Walter M. Petty as designing engineer. Mr. Petty was with Mack Trucks, Inc., before joining Maccar and previous to that connection with the Service Motor Truck Co. of Wabash, Ind., as chief engineer.

HALIFAX, N. S.—General Automobile, Ltd., of Halifax, a new firm composed of prominent and representative business men of Nova Scotia, has taken on representation of Maxwell-Chrysler in that territory.

CANTON, O.—Papers have been filed with the Secretary of State increasing the capital stock of the Blake Piston Ring Co. from 1,000 shares, no par value designated, to 2,000 shares, no par value designated, to take care of improvements and enlargements. H. P. Blake is secretary and P. B. Belden president of the company.

NEW YORK.—The American Radiator Co. for 1924 reports net income of \$11,153,728, against \$13,923,636 in the previous year. The net for 1924, after allowance for preferred dividends, was equal to \$5.58 a share on the \$25 par common stock. The surplus after preferred and common dividends was \$7,553,900.

Garage, Potosi, Wis., Dawson Motor Co., Princeton, Ill., West Suburban Overland-Knight Co., Maywood, Ill.

WEST COLUMBIA, Texas.—The Columbia Motor Company of West Columbia, Texas, has been incorporated under the laws of Texas. The capital stock is \$250,000. Among the incorporators are J. D. McMurrey, L. Clear and L. Winston.

SAN FRANCISCO.—The Overland-Knight Sales Company has been organized here, with Calvin Erb as president, to distribute Willys Knight and Overland cars in this territory. Mr. Erb has been in the automotive industry in San Francisco since 1899, in what is reputed to be the oldest automobile store on the Pacific coast, at 1255 Market street.

RALEIGH.—Velie Motor Sales, Inc., is a new company formed at Raleigh, as distributors of the Velie line in this part of the Carolina territory. The capital is \$50,000. Incorporators including E. W. Lawrence, of Torquay Springs, N. C., and M. R. Guyer, of Raleigh.

DECATUR, Ill.—G. W. Ehrhart has secured the Packard agency for Decatur and Macon county. This line has not been represented here for some time.

All But 11 States Soon Will Have Gasoline Tax in Force

Of \$79,734,490 Collected Last Year \$49,711,326 Went to Highways Under State Supervision

WASHINGTON, April 4.—Thirty out of 48 states during 1924 paid gasoline taxes amounting to \$79,734,490 out of which \$49,711,326 was applied to road work under supervision of state highway departments, it has been made public here by the Bureau of Public Roads of the U. S. Department of Agriculture. The balance of the gasoline tax collected by the states went to county and local road funds and for miscellaneous purposes.

The report shows that two of the 13 states not having the gasoline tax laws in force in 1924 will fall in line in 1925 as follows: Kansas, 2 cents, May 1; Michigan, 2 cents, Feb. 15. It also shows that three states have amended their gasoline tax laws as follows: North Carolina from 3 to 4 cents, effective March 5; Tennessee from 2 to 3 cents, effective Feb. 9, and Wyoming, from 1 to 2½ cents, effective in March.

The eleven states which have not passed gasoline tax laws are: Illinois,

Iowa, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New York, Ohio, Rhode Island and Wisconsin.

Only one state, Arkansas, had a 4 cent per gallon gasoline tax during 1924 while eleven had a 1 cent per gallon gasoline tax; fifteen a two cent tax; one a 2½ cent tax and seven a 3 cent tax.

TOLEDO'S OLDEST DEALER FAILS

TOLEDO, April 6.—Voluntary petition in bankruptcy has been filed by Burton O. Gamble, automobile dealer, 2145 Madison avenue. He had been in business as the Gamble Motor Co.

The petition lists \$76,175 as liabilities and \$5,861 in assets.

Mr. Gamble was the oldest dealer in the business in Toledo, having started more than 20 years ago in the retail end of the business.

LOSE CARS IN BLAZE

PORTLAND, Ind., April 6.—Thirteen automobiles and one truck were destroyed, and five automobiles partly destroyed in a fire recently which swept the Studebaker garage here owned by H. J. McConochu. The loss will range from \$35,000 to \$40,000, partly covered by insurance. It is expected that the plant will be rebuilt as soon as the insurance is adjusted.

Crowded Dealer Field Fails to Hamper Florida Car Sales

Highest Levels Yet Recorded Now Being Reached—Lack of Certain Types Handicaps Some Dealers

ST. LOUIS, Mo., April 4.—In spite of an overcrowded dealer field, automobile sales in Florida are reaching higher levels than ever recorded before. Insufficient cars to supply the demand in certain lines and body types is handicapping some dealers. This, however, is not true of more than three lines of cars selling in the so-called popular price field. Low priced cars are selling well and with industrial development that is going forward it is indicated that the non-skilled trades will show a heavy increase in the number of workmen employed with a consequent increase in low priced car sales. Used cars also are moving and few dealers are in difficulty on their stocks.

NEW PEERLESS DEALER

WORCESTER, Mass., April 4.—F. H. Kenney, Worcester, has been appointed as a dealer in Peerless cars in that part Worcester country south of Leominster.

With the Associations

St. Louis Show Big Success

ST. LOUIS, Mo., April 6.—The Committee of the St. Louis Automobile Dealers Association which handled the recent show of that organization has announced that it has been possible to return to exhibitors at the show an amount equal to about 70 per cent of their investment. The paid attendance at the show was more than 100,000. While it has always been possible in previous years to return something to the exhibitors the dividend checks this year were larger than ever before.

Will Hear A. E. A. Message

MINNEAPOLIS, April 8.—"Profitable Shop Operation" will be the subject of an address by Arthur R. Mogge, Merchandising Director of the Automotive Equipment Association, at the annual convention of the Minnesota Motor Trades Association in Minneapolis to be held tomorrow.

Extensive arrangements for the convention are being made by Arnon N. Benson, Secretary of the M. M. T. A. Early reports indicate that about 500 car dealers and repairmen from nearly every city and town in Minnesota will attend the meeting.

New Association Formed

BOSTON, April 6.—The Metropolitan Garage Association has been formed here by the operating garage owners to im-

prove garage conditions and operation. H. Day Baker has been named legislative counsel and secretary.

Show Dates Set for 1926

DES MOINES, Iowa, April 6.—At the past show meeting of the Automobile Dealers Association of Des Moines, it was decided to hold the 1926 show during the third week of February. Dealers declared that the show was the "kick-off" of the selling season and decided that the show should be held as early as possible. The Coliseum was contracted for at the early date suggested.

Secretary Van Vliet reported that the show was a financial success and that a considerable surplus was left in the treasury after all expenses incident to the show had been paid.

Used Car Exchange Formed

WARREN, Ohio, April 6.—Through the efforts of the Warren Automobile Dealers Association, a used car exchange has been formed to receive and dispose of all cars taken in trade.

A. C. Faeh Joins N. A. D. A.

ST. LOUIS, Mo., April 6.—Announcement has been made of the appointment of A. C. Faeh of Cleveland, Ohio, to the Executive Staff of the National Automobile Dealers Association, as Field Manager. His headquarters will be in St. Louis.

Mr. Faeh was formerly general sales manager of the Cleveland Automobile Club, having been connected with that organization for the past three and one-half years. He directed the work which resulted in the club gaining 42,000 new members making it one of the most influential in the United States.

Heads Youngstown Motor Club

YOUNGSTOWN, Ohio, April 6.—L. B. McKelvey was recently re-elected president of the Youngstown Automobile Club. Arthur J. Ferris was named vice-president and Leo Collier added to the board of trustees.

C. A. Baird, secretary of the Youngstown Automobile Dealers Association, stated that the recent automobile show was the most successful in the organization's history from the standpoint of attendance and gross sales directly attributable to the exhibit.

Brooklyn Dealers Hear Experts

BROOKLYN, April 6.—Lynn M. Shaw, assistant general manager of the National Automobile Dealers Association, and J. Howard Wischaupt, sales specialist, were speakers at a luncheon and sales meetings held here under the auspices of the Brooklyn Motor Vehicle Dealers Association. There were 100 dealers and their sales executives present.

Valuable Merchandising Data Is Promised Through Survey

Study of Buying Public Being Made By National Organization in Selected Towns

CHICAGO, April 6.—Valuable information for automotive merchants will be compiled as a result of the survey which is being conducted in the Illinois towns of Dixon, Rochelle and Sycamore under the auspices of the Retailers' National Council.

The purpose of the survey is to determine the civic, social and economic factors affecting the commercial life of the communities and point the way to improvement of conditions in these communities. A complete questionnaire has been compiled and trained workers have already started interviewing the families in and near Rochelle.

Included in the information to be compiled is the amount each family spends for automobiles, accessories and automobile repairs, whether this is spent locally, in a nearby town, in Chicago, through mail order houses or through canvassers. Various considerations influencing the place of purchase also will be recorded, such as quality, goods in stock, variety and assortment, up-to-dateness, style, prompt attention, personal interest of sales people, courtesy, personality, knowledge of stock, reliability, accuracy, guarantees, credit policy, delivery service, arrangement of stock, appearance of store, advertising, window display, location-convenience, local pride, friendship-relationship, only place to buy.

These same considerations will be ascertained for about 30 other items of merchandise or expenditures.

Faults of Merchants

In another part of the questionnaire those interviewed are asked to answer frankly a number of questions designed to find out the faults of the town's merchants and get suggestions for improvement. Among the questions are these:

1. How do you feel toward Rochelle as a place to trade? Why?
2. What do you think of stores here in general? Why?
3. How could these stores be improved?
4. What are the best stores in town? Why?
5. What stores in town do you not like to trade in? Why?
6. What criticisms or complaints have you of the stores here? Which ones? Why?
7. What difficulties do you find in trading here?
8. What articles do you buy elsewhere because you cannot get them here?
9. How often do you go to Chicago? (The nearest large city.)
10. Do you prefer to buy on credit? or for cash?
11. Have you been refused credit by any of the stores here? Which ones?
12. Would you trade in town more if offered credit?
13. Which newspaper do you prefer?
14. How can the local newspapers be improved?
15. What advertisements do you read in the local newspapers?
16. Are they reliable? or unreliable?
17. What improvements would you like to see in transportation facilities?
18. What roads would you like to see improved?

Coming Motor Events

Automobile Shows

Burlington, Vt. April 8-11

Annual Automobile Show, University of Vermont, auspices Ethan Allen Club.

Detroit May 20-23

Second annual Automotive Maintenance Equipment Show, General Motors Bldg. Conducted by National Automobile Chamber of Commerce, with co-operation of Motor and Accessory Manufacturers' Assn., National Automobile Dealers' Assn., Society of Automotive Engineers, Automotive Equipment Assn., Automotive Electric Assn., and Automotive Manufacturers' Assn. Sam Miles, Manager.

Holdrege, Neb. April 8-11

Annual Automobile and Style Show, auspices Holdrege Commercial Club.

Conventions

Minneapolis April 8-9
Fourth annual convention Minnesota Motor Trades Association, Curtis Hotel.

Pittsburgh May 6-9
Ninth annual meeting American Gear Manufacturers' Assn.

Foreign Shows

Bandoeng, Batavia April 8-14
Automotive Exhibition by the Netherlands Indies Jaerbeurs.

Melbourne, Australia April 22-May 7
International Automobile Show, Chamber of Automotive Industries and Royal Automobile Club of Victoria.

Sydney, Australia April 1-17
Royal Agricultural Show, including automobile exhibits.

Milan, Italy April 11-27
International Show

Races

Fresno, Cal. April 30
Charlotte, N. C. May 11

19. What improvements would you like to see in traffic regulations and parking facilities?

20. What improvements would you like to see in the schools?

21. What improvements would you like to see in amusement, recreation and social facilities?

22. What do you think of Rochelle as a place to live?

23. What does this community need to make it a better place to live?

The answers to individual questionnaires are to be kept confidential and it is hoped that the residents of the community will be perfectly frank in answering the questions. If so, the information gathered in these three towns is expected to be of great value to retailers in all lines in the improvement of their merchandising methods.

Chevrolet's Janesville Plant Reaches Its Production Peak

JANESVILLE, Wis., April 6.—The Chevrolet Motor company plant here has just reached the highest quantity production peak in its history with an average of 200 cars a day. Until March 1 the maximum capacity of the plant was 170 cars a day, but with new and additional machinery just installed this limit has been extended. The March schedule called for 4,400 cars. The April schedule for the Janesville plant calls for 5,000 cars.

The Fisher Body corporation plant adjoining is now turning out an average of 75 closed bodies a day, and the two plants together are carrying a payroll of 1,300 men.

Work on a new testing track for Chevrolet cars will be pushed as soon as ground conditions permit, according to officials here.

TURNER PLANS NEW HOME

KOKOMO, Ind., April 4.—The Turner Manufacturing Co. of this city, manufac-

turers of automotive devices and accessories, has announced plans for the erection at once of a new factory. A site near the downtown district of the city has been purchased and construction of the plant is to start soon, according to E. W. Turner, president and general manager.

The present plant owned by the company has been inadequate for some time and recent additions to the Turner line has made the need even more urgent. Sales of Turner products have been most encouraging for some time, both in United States and in foreign markets, according to Mr. Turner.

The new factory will call for the expenditure of about \$60,000. It is to be a modern two-story building, of brick and steel construction, and will provide approximately 20,000 feet of floor space.

The Turner products now include: The Turner 2 in 1 timer, the Turner instant foot accelerator, 2 in 1 door and throttle lever extension, quick view oil gauge and all metal visor.

BIG DURANT-STAR SHIPMENT

CHICAGO, April 4.—Substantiating the article in the March 5 issue of MOTOR AGE, telling about the greatly improved condition of the automobile trade in North Dakota, The Stimson Motor Company of Minneapolis has recently shipped into Minot, North Dakota, a solid train of 30 carloads of Durant and Star automobiles. This shipment left the Durant factory in Lansing, Michigan, March 14, and arrived at Minot 46 hours later. The cars were shipped to the Kluver Motor Co., Durant and Star dealers at Minot, who reported that all the cars were sold before arrival, and that additional orders are waiting April delivery. According to The Stimson Motor Company, this shipment was valued at approximately \$125,000.

Expert Economist Rules in Industry Now, Says Williams

Marmon President Declares Money-Saver Has Assumed Role Formerly Played by Others

INDIANAPOLIS, April 6.—"This year will go down into history as the one in which the expert economist and money-saver stepped in and took charge of the automobile industry," said Mr. G. M. Williams, president of Nordyke and Marmon Company, in an interview. "This is not only true of Nordyke and Marmon Company but it is equally true of the entire automobile industry. Not that the expert economist and money-saver is crowding out the engineer and the production expert, but he is now assuming the leading role that heretofore has been played by others."

As a result of expert money-saving and real economy in the industry the cars of 1925 as viewed at the automobile shows are the finest and the best values ever displayed.

Better Cars for Less Money

"In every automobile show I attended this year I found factory executives evidencing a disposition to make every dollar count throughout every department. In line with this new spirit, Nordyke and Marmon Company, like many others, has been systematically improving its factory and distributing system, stopping all waste effort in all departments, thus enabling the company and the entire industry to produce for the public a much better car for less money."

New Type of Sales Effort

"Another unmistakable development of the present year is an entirely new brand of intense interest, and an entirely new type of effort in the sales end of the industry. The man who looks upon himself merely as a manufacturer is doomed. He must of necessity realize that the more important half of his function is to sell what he makes. The industry has not reached the saturation point and this year will unquestionably be an excellent one throughout the entire country. The rehabilitation of the farmer and the quiet confidence which business is expressing through increased bank clearances everywhere are signs that point to such assurances of prosperity."

GLENDALE SHOW A SUCCESS

LOS ANGELES, April 4.—The first automobile show conducted by the motor car dealers' association of the city of Glendale, a suburb of Los Angeles, proved so successful that announcement has been made the show will be an annual event. In the past it has been the belief of Glendale dealers that their customers and prospects would be satisfied from the show standpoint by the annual exhibit in Los Angeles. The attendance at the home show, however, was so large that the dealers declared hereafter they will insist on an exclusive Glendale event.

SQUEEKS and RATTLES



Wife (on auto tour): "That man said there was a roadhouse below here. Shall we stop there?"

Hubby: "Did he whisper it or say it out loud?"

—Kellogg's Square Dealer.

OTHERWISE O. K.

He: "How is that back tire on your side, Eunice?"

She (looking over the side of the car): "Oh, it's all right. It's flat on the bottom, but it's round on the top."

—West Coast Leader, Lima, Peru.

"How is the licker you are getting nowadays?"

"Oh, it's better now that winter is here and they have to put alcohol in it to keep it from freezing."

—Phoenix.

HIGH ADVENTURE

From a country schoolboy's essay on "What I Would Do With a Million":

"If I had a million dollars I would buy me a Ford car and a new suit and a new pair shoes and go all round the world to see it all and when the car got something wrong I would not wait to get fixed, I would buy me new Ford car and give old one to kids and keep going and if it was water and I did not find boat I would buy me airplane and just keep going."

—American Legion Weekly.

Survey Shows Large Increases in Sales By Marmon Dealers

INDIANAPOLIS, April 6. — Greatly increased Marmon sales are reported by almost every Marmon distributor and dealer in a survey made recently by the sales department of the Nordyke & Marmon Company. The survey covered the months of December, 1924, and January, 1925. A statement issued on this survey shows that four cities reported gains for the period in excess of 300 per cent. These cities were Albany, Boston, Buffalo and Indianapolis.

Washington, D. C., made a gain of 250 per cent, while New York City showed an increase of 136 per cent with Detroit showing a record increase of 118. Practically every Marmon dealer covered in the survey showed a marked increase in the volume of retail business over last year's record.

YOU AND ME, BOTH

Prospect: I'd like to see a good used car.

Salesman: Damned if I wouldn't like to see one myself.

—Auto Review.

Epitaph—"He had the right-of-way, but the other driver was a woman."

—Auto Review.

A LITTLE INVESTMENT

"The dealer made you pay more than this car is worth," commented the candid friend.

"I know it," answered Mr. Cumrox. "I'm selling him a piece of property, and I want to convey the impression that I am guileless and easy."

—Washington Star.

PHILOSOPHY VS. REALISM

Theorist: After the automobile, what? His Wife (brightly): Dust!

—Life.



"I think there's a hack in your razor," remonstrated the unfortunate customer. "What do you want—a Packard?" replied the irate barber, as he wiped the razor on the customer's clean vest.

—Lehigh Burr.

SEGRAVE WINS ANOTHER

PARIS, March 26 (By Mail).—Driving a 91½ cubic inch Darracq, from which the supercharger had been removed, Major Segrave won the 313 mile race on Miramas track at an average speed of 78.8 miles an hour, making the full trip in 3 hours, 58 minutes and 55 seconds. Second place was taken by Count Conelli on a similar machine; Vidal on a 122 cubic inch Grand Prix Bugatti finished third; the English jockey, Duller, was fourth on a 91½ inch Darracq, and the English amateur, Lieut. Glen Kidston, R. N., came in fifth on a 122 inch Bugatti.

This race was supposed to be for stock cars, but the only restriction was that the machines should appear on the maker's catalog. To put the different types of machines on an equality, a weight limit of 1,322 pounds was stipulated for 67 cubic inch machines, and this weight had to be increased by 220 pounds for each 15¼ cubic inches piston displacement above 67 inches. All the competition lay between the three Darracqs and the 122 inch Bugattis.

Prices and Weights of Current Passenger Car Models

SHIP.	WT. PASS.	BODY STYLE.	PRICE	SHIP.	WT. PASS.	BODY STYLE.	PRICE	SHIP.	WT. PASS.	BODY STYLE.	PRICE	SHIP.	WT. PASS.	BODY STYLE.	PRICE
ANDERSON	"41"			3406	5-p	Sedan	2,485	2995	5-p	"B" Sedan	1,095	3510	5-p	Brougham	1,995
2650	5-p	Touring	\$1,195	3380	5-p	Victoria	2,390	3077	5-p	Spec. "B" Sedan	1,195	GRAY	"Q"		
2675	4-p	Sp. Touring	1,445		"V"			3020	5-p	Sedan A	1,245	1760	5-p	Touring	\$620
2925	2-p	Coupe	1,435	3950	7-p	Touring	2,475	3107	5-p	Spec. "A" Sedan	1,330	1880	2-p	Coupe	845
2875	5-p	Sedan	1,095	4320	7-p	Sedan	3,325	2723	5-p	Coach	1,095	2020	5-p	Sedan	895
2925	5-p	Sp. Sedan	1,895	CHANDLER	"SS"			2823	5-p	Spec. Coach	1,195	2180	5-p	Royal Sedan	995
	"59"			3090	2-p	Roadster	\$1,795	DORRIS	"6-80"			HCS	"6"		
2975	7-p	Touring	1,595	3132	4-p	Roadster	1,785	4120	4-p	Pasadena Tour.	\$4,150	3760	4-p	Touring	\$2,650
3200	7-p	Sedan	1,945	3084	5-p	Touring	1,595	4115	7-p	Touring	4,150	3950	4-p	Coupe	3,350
APPERSON	"6"			3223	7-p	Touring	1,735	4193	4-p	Coupe	4,985	4010	4-p	Sedan	3,350
3100	5-p	Sp. Phaeton	\$1,850	3284	4-p	Royal Dispatch	1,885	4200	5-p	Sedan	5,550	HAYNES	"60"		
3145	3-p	Coupe	2,350	3309	5-p	Coach	1,595	4810	7-p	Sedan	5,300	3295	5-p	Touring	\$1,400
3470	5-p	Sp. Sedan	2,395	3309	5-p	Chummy Sedan	2,045	DUESENBERG				3725	5-p	Sedan	2,300
	"V-8"			3469	5-p	Met. Sedan	2,195	3920	3-p	Roadster	\$5,500	3560	5-p	Brougham	2,300
3815	5-p	Phaeton	2,455	3428	5-p	Sedan 4 d.	1,995	3700	5-p	Phaeton	6,250	HERTZ	D-1		
3900	7-p	Phaeton	2,535	3521	7-p	Sedan	2,195	3920	7-p	Phaeton	6,750	3360	5-p	Sedan	\$1,095
3955	5-p	Sport Phaeton	2,800	3598	7-p	Limousine	3,095	3980	4-p	Sp. Phaeton	6,500	HUDSON	"Super Six"		
3815	7-p	Sport Phaeton	2,900	CHEROKEE	"Superior"			4000	4-p	Coupe	7,500	3300	4-p	Speedster	\$1,400
4180	5-p	Sedan	3,455	1690	2-p	Roadster	\$525	4350	7-p	Sedan	7,800	3425	7-p	Phaeton	1,500
4200	7-p	Sedan	3,585	1790	5-p	Touring	625	DU PONT	"D"			3450	5-p	Coach	1,345
4840	5-p	Sport Sedan	3,750	1890	2-p	Utility Coupe	715	3300	2-p	Roadster	\$2,600	3585	5-p	Sedan	1,795
4830	7-p	Sport Sedan	3,850		5-p	Coach	735	3550	5-p	Touring	2,600	3675	7-p	Sedan	1,695
	"ST 8"			2070	5-p	Sedan	825	3550	7-p	Touring	2,750	HUPMOBILE	"R" 4		
	5-p	Sp. Phaeton	2,550	CHRYSLER				3800	5-p	Touring Sedan	3,400	2595	2-p	Roadster	\$1,225
	3-p	Coupe	2,800	(112 3/4 in. W. B.)				DURANT	"A-22"			2745	5-p	Touring	1,225
	4-p	Brougham	2,650	2805	4-p	Roadster	\$1,625	2300	2-p	Roadster	\$1,080	2760	2-p	Coupe	1,350
AUBURN	"4"			2780	5-p	Touring	1,395	2225	5-p	Touring	830	2860	4-p	Coupe	1,595
	5-p	Touring	\$795	2785	5-p	Phaeton	1,495	2300	5-p	Touring F. W. B.	940	2975	5-p	Sedan	1,600
	"6-43"			2935	4-p	Coupe	1,895	2357	2-p	Business Coupe	935	2895	5-p	Club Sedan	1,375
2610	5-p	Special Touring	1,395	3060	5-p	Sedan	1,825	2395	4-p	Coupe	1,160		3-p	Roadster	1,975
2900	5-p	English Coach	1,945	3085	5-p	Imperial Sedan	2,065	2505	5-p	Sedan	1,190	3135	5-p	Touring	1,975
2885	5-p	Sedan	1,595	3090	5-p	Crown Sedan	2,195	2430	5-p	Coach	1,050	3295	4-p	Coupe	2,325
	"8-63"			2995	5-p	Brougham	1,965	ELCAR	"4-41"			3410	5-p	Sedan	2,375
3225	5-p	Sp. Touring	1,895	3225	5-p	Town Car	3,725	2560	5-p	Touring	\$995	JEWETT	"23-25"		
3550	5-p	Sedan	2,550	CLEVELAND	"31"			2585	5-p	Demi Sp. Touring	1,095	2885	5-p	Roadster	\$1,630
3510	5-p	Brougham	2,395	2325	5-p	Touring	\$895	2641	5-p	Sportster	1,195	3015	5-p	Touring	1,320
3550	7-p	Sedan	2,550	2580	5-p	Sedan	1,105	2779	5-p	Sp. Sedan	1,695	3015	5-p	DeLuxe Touring	1,320
	"8-80"				"43"			2900	5-p	Sedan	1,495		3-p	Bus. Coupe	1,340
	4-p	Sport Roadster	1,975	2750	5-p	Touring	1,095	2779	5-p	Brougham 3d	1,265	3025	5-p	Sedan	1,550
	4-p	Club Roadster	2,075	2810	5-p	Touring De Luxe	1,195		5-p	Sp. Brougham	1,395	3305	5-p	DeLuxe Sedan	1,780
	4-p	Sport Brougham	2,350	2880	3-p	Coupe	1,295	2600	5-p	Demi Sp. Tour.	1,220	2990	5-p	Brougham	1,415
	5-p	Sedan	2,350	2870	3-p	Spec. Coupe	1,395		5-p	Sp. Touring	1,420	3110	5-p	Sp. Brougham	1,555
BARLEY	"6" 6-50			3040	5-p	Spec. Sedan 4 d.	1,495	2779	5-p	Sp. Sedan	1,920	JORDAN	(120 in. W. B.)		
2750	5-p	Touring	\$1,395	3190	5-p	Sedan De Luxe	1,695	2900	5-p	Sedan	1,720	3420	5-p	Brougham 4 d.	\$2,385
2800	5-p	Sp. Touring	1,495	3190	5-p	Sport Sedan	1,725	2779	5-p	Brougham	1,490	3375	4-p	Victoria	2,385
3100	5-p	Sedan	1,850	2990	5-p	Brougham	1,545		5-p	Sp. Brougham	1,620		(124 1/2 in. W. B.)		
3150	5-p	Sp. Sedan	2,250	3000	5-p	Coach	1,295		5-p	"8-80"		3260	4-p	Blueboy Touring	2,095
BUICK	"Standard"			GOLE	"MASTER"				3-p	Sp. Roadster	2,265		Series "A"		
2750	2-p	Roadster	\$1,150	3675	4-p	Volante Tour.	\$2,325	3000	3-p	Sp. Roadster	2,315	3330	2-p	Playboy Road.	2,575
2800	2-p	Roadster Encl.	1,190	3795	7-p	West. Tour.	2,325	3700	5-p	Sp. Touring	2,165	3340	5-p	Touring	2,575
2920	5-p	Touring	1,175	3675	4-p	Aero-Vol. Tour.	2,475		7-p	Sp. Touring	2,265	3635	5-p	Friendly "g"	2,875
2970	5-p	Touring Encl.	1,250	4055	5-p	Brouette Sedan	3,225	4000	5-p	Brougham	2,865	3520	4-p	Brougham	2,875
2960	2-p	Coupe	1,375	4000	7-p	Royal Sedan	3,225		5-p	Sedan	2,265	3525	5-p	Victoria	2,775
3075	4-p	Coupe	1,565	4100	7-p	Royal Limousine	3,325	4050	7-p	Sedan	2,765		5-p	Sedan	2,975
3185	5-p	Dbl. Service Sedan	1,475	CUNNINGHAM	"V-6"			2130	5-p	Touring	\$900		7-p	Sedan	3,325
3245	5-p	Sedan	1,665	4600	7-p	Touring	\$6,300	2305	5-p	Coach	895		7-p	Suburban Sedan	3,375
3050	5-p	Coach	1,295	4500	4-p	Sp. Touring	5,800	FLINT	"55"			KISSEL			
	"Master"			4700	4-p	Coupe	7,150		4-p	Spec. Roadster	\$1,950	2980	5-p	Phaeton Std.	\$1,685
	(120 in. W. B.)			5000	6-p	Sedan	7,650	3145	4-p	Touring	1,595	3170	5-p	Phaeton De Luxe	1,885
3235	2-p	Roadster	1,365	DAGMAR	"6-70"			3310	4-p	Sp. Touring	2,050	3190	4-p	Tourster	2,035
3335	2-p	Roadster Encl.	1,400	3800	4-p	Sp. Touring	\$3,500	3455	4-p	Coupe	2,195		7-p	Touring	1,985
3465	5-p	Touring	1,395	4200	4-p	Petite Coupe	4,500	3585	5-p	Sedan	2,285	3180	2-p	Speedster	2,185
3540	5-p	Touring Encl.	1,475	3700	4-p	Phaeton	3,500		5-p	Brougham 4 d.	2,735	3530	2-p	Enc. Speedster	2,785
3770	4-p	Coupe	2,125	3750	4-p	Roadster	3,500		5-p	"40"		3480	4-p	Coupe	2,585
3850	5-p	Sedan	2,225	3800	6-p	Tourer	3,500	2400	5-p	Touring	1,235		5-p	Brougham	1,895
3560	5-p	Coach	1,495	4200	4-p	Petite Sedan	4,500		5-p	Sedan 4 d	1,580	3580	5-p	Brougham Sedan	2,635
	(128 in. W. B.)			4500	4-p	De Luxe Coupe	4,750		5-p	Brougham	1,620	4070	7-p	Victoria	2,685
3485	3-p	Sp. Roadster	1,750	4800	7-p	Sedan	4,750	2720	5-p	Brougham	1,620	4010	7-p	Berline Sedan	3,385
3550	5-p	Sp. Touring	1,800	3100	2-p	Roadster	1,785	FORD					2-p	Speedster	2,485
3610	7-p	Touring	1,625	3200	4-p	Sp. Touring	1,785		Without Starter and Dem. Rims				4-p	Speedster	2,585
3690	7-p	Touring Encl.	1,700	3150	5-p	Touring	1,985	1369	2-p	Runabout	\$260		2-p	Enc. Speedster	2,985
3745	3-p	Country Club	2,075	3400	2-p	Coupe	2,345	1494	5-p	Touring	290		5-p	Brougham	2,985
3905	5-p	Brougham Sedan	2,350	3500	5-p	Sedan	2,345		With Starter and Dem. Rims				5-p	Victoria	2,985
4030	7-p	Limousine	2,525	DANIELS	"24-38"			1521	2-p	Runabout	345		7-p	Sedan	3,485
3995	7-p	Sedan	2,425	4150	4-p	Touring	\$6,800	1644	5-p	Touring	375		7-p	Berline Sedan	3,585
3850	7-p	Town Car	2,925	4765	7-p	Touring	6,900	1749	2-p	Coupe	520				
CADILLAC	"V-63 Standard Line"			4600	4-p	Sedan	7,600	1927	5-p	Sedan, Fordor	660	LEXINGTON	"Concord"		
4190	4-p	Roadster	\$3,185	5200	7-p	Sedan	7,800	1882	5-p	Sedan, Tudor	580		5-p	Touring	\$1,595
4280	7-p	Touring	3,185	DAVIS	"90"			2800	3-p	Sport Roadster	\$2,800		5-p	Touring (Enc.)	1,495
4200	4-p	Phaeton	3,185	2650	4-p	M. o'War Road.	\$1,495	2845	5-p	Touring	2,650		5-p	Spec. Touring	1,795
	5-p	Coach	3,185	2915	4-p	Legionnaire Tour.	1,495	2965	3-p	Coupe	2,700		5-p	Sedan	2,185
4610	7-p	Sedan	3,585	2750	5-p	Phaeton	1,395	3175	5-p	Sedan	3,200		5-p	Spec. Sedan	2,445
4830	4-p	Victoria	3,275	3070	5-p	Sedan	1,995	3080	5-p	Sport Sedan	3,350		2-p	Roadster	2,145
4625	5-p	Landau	3,650	3065	5-p	Berline Sedan	1,995	3275	7-p	Limousine	3,500		5-p	Touring	2,095
4655	7-p	Std. Imperial	4,010	2700	5-p	Brougham	1,595	3135	7-p	Cabriolet	4,400		5-p	Lark Touring	2,345
	"Custom Built"				"91"			GARDNER	"Series 5"				5-p	Cal. Touring	2,495
4260	2-p	Coupe	3,975	2835	4-p	Roadster	1,795	2520	3-p	Roadster	\$945		7-p	Touring	2,195
4400	5-p	Coupe	4,350	3020	5-p	Phaeton	1,695	2545	3-p	Spec. Roadster	1,045		5-p	Royal Coach	2,495
4490	5-p	Sedan	4,550	3245	5-p	Sedan	2,295	2560	3-p	Radio Roadster	1,135		5-p	Brougham	2,595
4590	7-p	Suburban	4,650	3050	5-p	Brougham	1,895	2585	5-p	Touring	995		5-p	Sedan	2,895
4655	7-p	Imp. Suburban	4,950	3215	5-p	Berline Sedan	2,295	2610	5-p	Special Touring	1,095	LINCOLN			
CASE	J. I. C.			DODGE BROTHERS				2680	5-p	Touring De Luxe	1,145	4050	2-p	Roadster	\$4,000
3260	3-p	Roadster	\$1,840	2473	2-p	Roadster	\$855	2590	5-p	Touring "A"	1,045	4290	7-p	Touring	4,000
3290	5														

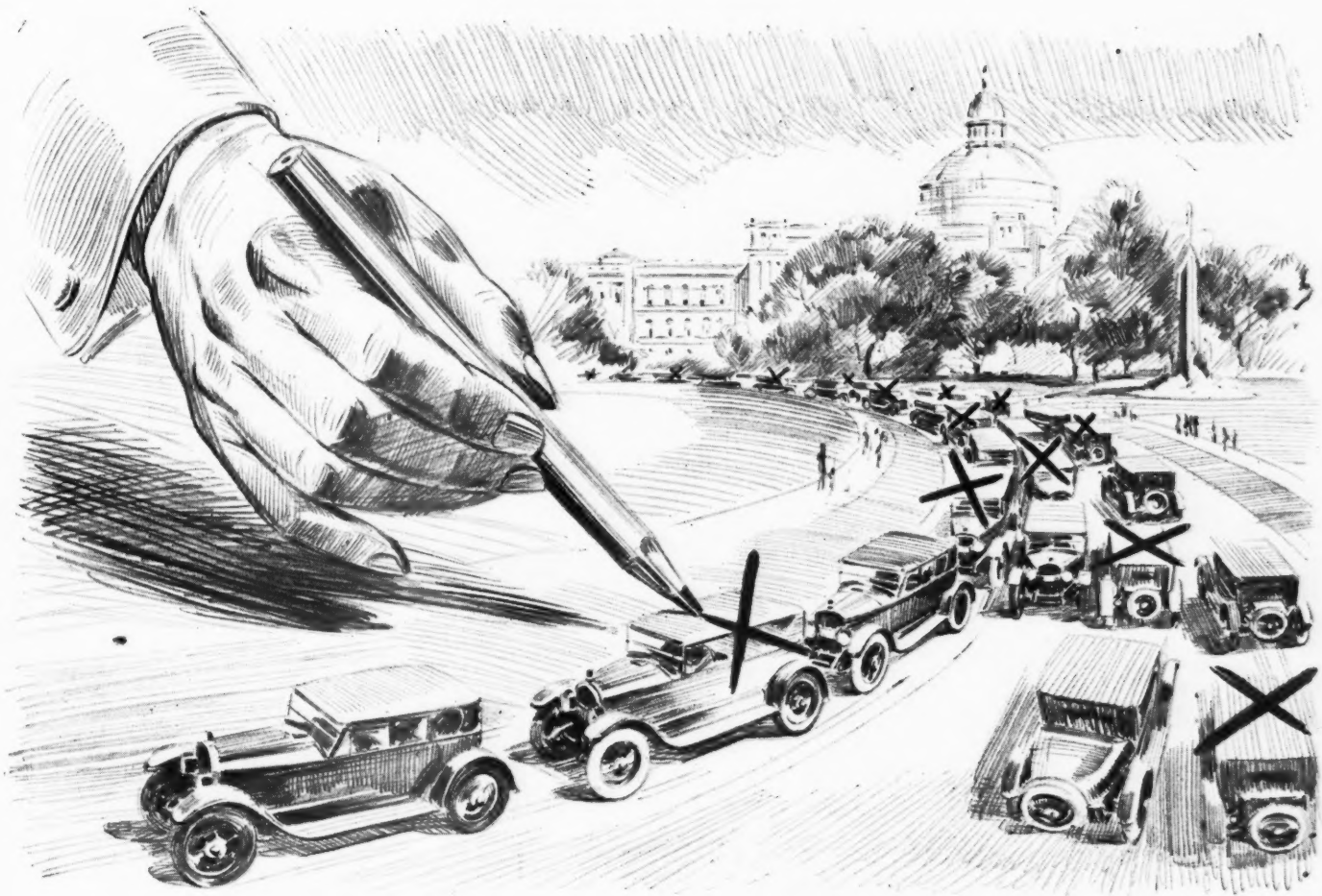
Prices and Weights of Current Passenger Car Models

SHIP. WT. PASS. BODY STYLE PRICE					SHIP. WT. PASS. BODY STYLE PRICE					SHIP. WT. PASS. BODY STYLE PRICE					SHIP. WT. PASS. BODY STYLE PRICE				
LOCOMOBILE "48"					OLDSMOBILE "30"					RICKENBACKER					Special Six				
5030	4-p	Sportif. Tour.		\$7,460	2145	2-p	Roadster		\$590	2864	4-p	Sp. Roadster		\$1,595	3360	2-p	Du. Roadster		1,450
5330	7-p	Touring		7,460	2270	2-p	Sp. Roadster		985	2880	5-p	Sp. Touring		1,395	3440	2-p	Sp. Roadster		1,535
5600	5-p	Victoria Sedan		10,050	2200	5-p	Touring		890	3050	4-p	Coupe		1,895	3475	5-p	Du. Phaeton		1,495
5464	7-p	Brougham		10,040	2360	5-p	Sp. Touring		1,015	.....	5-p	Coach Brough.		1,595	.....	4-p	Club Coupe		1,695
5868	7-p	Encl. Drive			2330	2-p	Bus. Coupe		1,045	.....	5-p	Sedan		1,995	3675	4-p	Victoria		1,895
5624	7-p	Cabriolet		10,300	2460	4-p	Coupe		1,175	3326	4-p	Sport Phaeton		2,195	3785	5-p	Brougham		1,795
McFARLAN "SV"					2410	5-p	Coach		1,075	3440	4-p	Coupe		2,695	.....	5-p	Coach		1,695
3700	2-p	Roadster		\$2,650	2570	5-p	Sedan		1,285	3585	5-p	Sedan		2,795	3855	5-p	Sedan		1,935
.....	2-p	Spec. Roadster		2,900	2740	5-p	DeLuxe Sedan		1,375	.....	5-p	Coach Brough.		2,395	3780	5-p	Berline		2,060
3600	5-p	Touring		2,650	OVERLAND "91" 4					3160	5-p	Sedan		1,995	Big Six				
.....	7-p	Touring		2,750	(100 in. W. B.)					3326	4-p	Sport Phaeton		2,195	3785	7-p	Du. Phaeton		1,875
3850	4-p	Coupe		3,100	1769	2-p	Roadster		\$495	3440	4-p	Coupe		2,695	4030	5-p	Coupe		2,450
.....	4-p	Coupe		3,180	1863	5-p	Touring		495	3585	5-p	Sedan		2,795	.....	5-p	Brougham		2,575
3850	5-p	Sedan		3,180	2177	2-p	Coupe		635	3485	5-p	Coach Brough.		2,395	4150	7-p	Sedan		2,575
.....	5-p	Spec. Sedan		3,180	2130	5-p	Sedan		715	ROAMER "6-54-E"					4200	7-p	Berline		2,650
3850	7-p	Sedan		3,280	2004	5-p	Coupe Sedan		585	(118 in. W. B.)					STUTZ "6-94"				
.....	5-p	Sub. Sedan		3,380	(113 in. W. B.)					3100	2-p	Roadster		\$2,685	3585	3-p	Roadster		\$2,395
.....	7-p	Sub. Sedan		3,480	.....	5-p	Sta. Sedan		985	3100	4-p	Tourer		2,485	3856	5-p	Touring		2,395
.....	5-p	Brougham		3,180	.....	5-p	Sedan De Luxe		1,150	3300	4-p	Sp. Touring		2,750	3875	5-p	Tourabout		3,000
.....	5-p	Brougham 4d.		3,180	PACKARD "4"					.....	7-p	Touring		2,685	3950	4-p	Coupe		3,050
.....	5-p	Coach Brougham			(126 in. W. B.)					.....	3-p	Cabriolet		3,285	4020	5-p	Sedan		3,050
.....	5-p	Town Car		4,600	3643	4-p	Roadster		\$2,785	(138 in. W. B.)					3896	5-p	Sportster		3,035
4000	3-p	Roadster		\$5,400	3653	5-p	Touring		2,585	4100	5-p	Spec. Sedan		4,250	3966	7-p	Touring		3,070
4600	5-p	Sp. Touring		5,600	3595	4-p	Sp. Touring		2,750	4200	7-p	Suburban Sedan		3,950	1190	5-p	Sportbrohm		3,785
4700	7-p	Touring		5,700	3753	4-p	Coupe		2,595	3650	4-p	Sport		3,650	4345	7-p	Suburban		3,935
4900	4-p	Coupe		6,720	3876	5-p	Coupe		2,685	"4-85-E"					4444	7-p	Berline		4,035
5200	4-p	Tour. Sedan		6,720	3987	5-p	Sedan		2,585	3200	2-p	Spec. Speedster		3,785	VELIE "60"				
5200	7-p	Tour. Sedan		6,810	3974	5-p	Sedan Limousine		2,735	2360	5-p	Touring		\$1,155	8030	4-p	Sp. Roadster		\$1,650
.....	6-p	Sedan		6,720	(133 in. W. B.)					2405	3-p	Coupe		1,325	2840	5-p	Touring		1,275
.....	7-p	Sedan		6,810	3793	7-p	Touring		2,785	2595	5-p	Brougham		1,325	3025	5-p	Club Phaeton		1,425
.....	7-p	Spec. Sedan		6,810	4043	7-p	Sedan		2,785	2575	5-p	Sedan		1,455	3150	4-p	Coupe		1,825
.....	7-p	Enc. Sedan		7,110	4133	7-p	Sedan Limousine		2,885	Chassis					3100	5-p	Sedan		1,675
.....	7-p	Sub. Sedan		7,110	"8"					††Manufacturers do not quote list prices.					3340	5-p	Royal Sedan		1,925
5200	7-p	Town Car		9,000	4060	4-p	Runabout		3,950	STANLEY "252"				3083	5-p	Coach 2 d.		1,425	
MARMON "74"					4090	5-p	Touring		3,750	3400	5-p	Phaeton		\$2,500	3005	5-p	Coach 4 d.		1,450
3470	2-p	Roadster		\$3,165	4023	4-p	Sp. Touring		3,900	3800	5-p	Sedan		3,300	WESTCOTT "44"				
3666	5-p	Phaeton		3,165	4242	4-p	Coupe		4,650	1725	2-p	Roadster		\$540	3150	5-p	Spec. Touring		\$1,970
3766	7-p	Touring		3,165	4528	5-p	Coupe		4,825	1830	5-p	Touring		540	3300	4-p	Brougham 3 d.		2,320
3861	5-p	Brougham Coupe		3,295	4535	5-p	Sedan Limousine		4,850	2090	5-p	Touring F W B		745	(60)				
.....	5-p	Coupe de Luxe		3,455	4199	7-p	Touring		3,950	1916	5-p	Spec. Touring		795	3300	5-p	Sedan		2,325
3981	5-p	Sedan		3,295	4655	7-p	Sedan		5,000	1915	2-p	Coupe		750	WILLS SAINTE CLAIRE				
3921	5-p	Sedan de Luxe		3,775	4710	7-p	Sedan Limousine		5,100	.....	5-p	Coach		750	"A-68"				
.....	7-p	Sedan		3,370	"21-24"					2155	5-p	Sedan		820	(121 in. W. B.)				
4086	7-p	Sedan de Luxe		3,850	3875	4-p	Phaeton		\$2,165	2235	5-p	Spec. Sedan		1,090	3320	5-p	Touring		\$2,475
4000	5-p	Sedan Limousine		3,900	3935	7-p	Phaeton		2,165	STEARNS-KNIGHT					3500	5-p	Brougham		3,375
4100	7-p	Sedan Limousine		3,975	4050	5-p	Brough. De Luxe		2,395	.....	4-p	Coupe Roadster		\$1,795	(127 in. W. B.)				
MAXWELL "25"					4325	7-p	Sedan De Luxe		2,540	3775	5-p	Touring		1,595	3335	5-p	Traveler		3,085
2130	2-p	Roadster		\$885	4370	7-p	Sub. Limousine		2,965	4250	5-p	Sedan		2,095	3500	7-p	Phaeton		2,385
2275	2-p	Sp. Touring		975	PEERLESS "6-70"					4025	2-p	Coupe		3,395	3495	4-p	Coupe		3,785
2210	5-p	Touring		895	3050	2-p	Roadster		\$2,335	4275	4-p	Sp. Coupe		3,150	3625	5-p	Sedan		3,585
2410	5-p	Sp. Touring		1,055	3176	5-p	Touring		2,285	2950	5-p	Sedan		2,945	3685	7-p	Sedan		3,900
2255	2-p	Club Coupe		995	3350	7-p	Touring		2,485	4275	7-p	Sp. Brougham		3,395	3570	5-p	Brougham 4 d.		3,900
2405	4-p	Std. Coupe		1,195	3525	5-p	Coupe		2,495	.....	5-p	Brougham		2,095	3710	7-p	Limousine		4,085
2440	5-p	Club Sedan		1,045	3550	5-p	Sedan		2,565	.....	2-p	Roadster		2,495	.....	7-p	Town Car		5,600
2580	5-p	Std. Sedan		1,095	3725	7-p	Sedan		2,765	3775	5-p	Touring		2,395	"C-68"				
2595	5-p	Spec. Sedan		1,245	3825	7-p	Limousine		2,925	3850	7-p	Touring		2,495	(Custom Built 128 in. W. B.)				
2785	5-p	Trav. Sedan		1,585	Equipped "8"					4025	2-p	Coupe		3,395	.....	4-p	Roadster		3,185
MERCER "6"					3950	4-p	Phaeton		2,945	4275	4-p	Sp. Coupe		3,150	.....	5-p	Sedan		4,085
3860	3-p	Runabout		\$4,500	.....	7-p	Phaeton		2,990	2950	5-p	Sedan		2,945	.....	7-p	Sedan		4,100
3950	4-p	Touring		4,500	4300	5-p	Town Brougham		4,250	4275	7-p	Sp. Brougham		3,395	.....	5-p	Brougham		4,100
3900	4-p	Sporting		4,500	4310	5-p	Town Sedan		3,895	.....	5-p	Brougham		2,495	.....	7-p	Limousine		4,285
4070	3-p	Coupe		6,500	4400	7-p	Sub. Sedan		3,995	3525	4-p	Touring		1,875	.....	2-p	Roadster		2,435
4240	4-p	Sport Sedan		6,500	4525	7-p	Berline Lim.		4,195	3540	5-p	Touring		1,875	.....	5-p	Gray Goose Trav.		2,485
4350	4-p	Tour. Limousine		6,500	4100	4-p	Victoria Coupe		3,445	3550	2-p	Sport Coupe		2,185	.....	7-p	Touring		2,385
4300	5-p	Brougham		6,500	4150	5-p	Sub. Coupe		3,595	3650	5-p	Coupe Brougham		2,285	.....	4-p	Coupe		2,985
MOON Series "A"					PIERCE-ARROW "33"					3700	5-p	Sedan		2,475	.....	5-p	Brougham		3,185
2440	5-p	Roadster		\$1,250	4850	2-p	Runabout		\$5,250	3700	5-p	Brougham		2,475	.....	7-p	Limousine		3,285
2460	5-p	Roadster		1,295	4500	5-p	Touring		5,250	.....	5-p	Brough. Sedan		2,430	.....	7-p	Limousine		3,385
2460	5-p	Sp. Touring		1,195	4730	2-p	Coupe		6,800	STERLING-KNIGHT				2681	2-p	Roadster		\$1,275	
2605	5-p	Sedan 2d		1,595	4800	4-p	Sedan		6,900	3235	5-p	Phaeton		2,150	2768	5-p	Touring		1,295
2755	5-p	Petite Sedan 4 d.		1,685	4960	7-p	Sedan		7,000	3300	7-p	Touring		2,400	3062	2-p	Coupe		1,495
Newport					4730	6-p	Coupe Sedan		6,800	3200	2-p	Coupe Roadster		3,100	3115	5-p	Sedan		1,575
2760	5-p	Touring		1,495	4850	7-p	Limousine		7,000	3450	5-p	Sedan		2,800	3111	4-p	Coupe Sedan		1,495
2920	5-p	Sedan		1,815	5060	7-p	Enclosed Lim.		7,000	3580	7-p	Sedan		3,050	"47"				
3090	5-p	Petite Sedan		1,915	4780	7-p	French Lim.		7,000	3450	4-p	Sp. Brougham		2,750	3059	7-p	Touring		1,425
Metropolitan					4730	6-p	Landaulet		7,000	3700	5-p	Sedan		2,475	3481	7-p	Sedan		2,695
2860	5-p	Touring		1,515	"80"					3700	5-p	Brough. Sedan		2,430	.....	2-p	Roadster		1,845
3120	5-p	Sedan		1,995	3205	2-p	Roadster		2,895	.....	2-p	Roadster		\$8,150	.....	5-p	Touring		1,845
3190	5-p	Sp. Sedan		2,095	3260	4-p	Sport Tour.		3,695	4400	7-p	Touring		7,500	.....	5-p	Coupe Sedan		2,145
London					3385	7-p	Phaeton		2,895	4250	4-p	Sp. Touring		7,750	.....	5-p	Brougham		2,395
3270	5-p	Sp. Touring		1,985	3365	4-p	Coupe Landau		3,820	4600	4-p	Coupe		9,000	.....	4-p	Coupe		2,345
3590	5-p	Petite Sedan		2,540	3335	4-p	Coupe												

Current Passenger Car Specifications

(This list comprises cars distributed on a national basis)

MAKE AND MODEL	Wheelbase (Ins.)	TIRES		Make	Model	ENGINE				Electrical System		Clutch	Gear-set	Universal Joints	REAR AXLE		BRAKES		Steering Gear	Rear Springs				
		Standard Size (Ins.)	Balloon Equipment			Number of Cylinders, Bore and Stroke (Ins.)	Rated Horsepower N.A.C.C.	Valve Arrangement	Piston Material	Number of Main Crankshaft Bearings	Oiling System				Carburetor Make	Ignition System Make	Generator and Starter Make	Type and Make			Make	Type and Make	Gear Ratio	Foot, Type and Location	Hand, Type and Location	Four-Wheel Brake, Type	Make	Type and Length
Anderson.....41	115	31x5.2	Yes	Cont	7U	6-3 1/2 x 4 1/4	23.44	L	C	4	PC	Zen	Wes	Wes	P-B&B	Dur	R-Uni	1 1/2 Sal	4.75	E-R	E-T	Mec*	Gem	S-58
Anderson.....50	122	33x4.9	Yes	Cont	8R	6-3 1/2 x 4 1/2	27.34	L	C	4	PC	Zen	Rem	Rem	P-B&B	Dur	R-Uni	3/4 Sal	4.50	E-R	E-T	Mec*	Gem	S-58
Apperson.....6	120	22x5.7	Yes	Own	6	6-3 1/2 x 4 1/4	24.40	I	C	4	FP	Str	Rem	Rem	P-Roc	Mec	M-Stl	1 1/2 Col	5.10	E-R	I-R	Mec*	Lav	J-48
Apperson.....V-8	130	33x6.7	Yes	Own	8	8-3 1/2 x 5	33.80	L	C	3	PC	Sch	Rem	Rem	D-Own	Own	M-Thi	1 1/2 Own	4.66	E-R	I-R	Mec*	Own	J-49
Apperson.....St-Away "8"	130	32x5.7	Yes	Own	St. "8"	8-3 1/2 x 4 1/2	31.25	L	C	5	PC	Sch	Rem	Rem	P-Own	Own	M-Stc	1 1/2 Own	4.25	E-R	I-R	Mec*	Ros	J-...
Auburn....."4"	108	29x4.4	Yes	Lyc	CF	4-3 3/8 x 5	21.03	L	A	5	PC	.....	Rem	Rem	.....	.....	.....	1 1/2	4.63	E-R	E-T	Mec*	Ros	S-57
Auburn.....6-43	114	31x4	Yes	Lyc	7U	6-3 1/2 x 4 1/4	23.44	L	C	4	PC	Str	Rem	Rem	P-B&B	W-G	M-Uni	1 1/2 Col	4.63	E-R	E-T	Mec*	Jac	S-57
Auburn.....8-63	129	32x6.2	Yes	Lyc	2-H	8-3 1/2 x 4 1/2	31.25	L	C	5	PC	Sch	Rem	Rem	P-B&B	P-Lon	M-Uni	1 1/2 Col	4.63	E-R	E-T	Mec*	Ros	S-57
Barley.....6-50	118	33x4	No	Cont	7U	6-3 1/2 x 4 1/4	23.44	L	C	4	PC	Str	Del	Del	P-B&B	Ful	R-M&E	3/4 Col	4.90	E-R	I-R	None	Jac	S-56
Buick....."Standard"	114 3/8	31x4.9	Yes	Own	Sta	6-3 1/2 x 4 1/2	21.6	I	C	4	PC	Mar	Del	Del	D-Own	Own	M-Own	3/4 Own	4.90	E-F	I-R	Mec	Jac	V-48
Buick....."Master"	120	32x5.7	Yes	Own	Mast	6-3 1/2 x 4 1/2	27.34	I	C	4	PC	Mar	Del	Del	D-Own	Own	M-Own	3/4 Own	4.73	E-F	I-R	Mec	Jac	V-47 1/2
Cadillac.....V-63	128	33x5	Yes*	Own	63	8-3 1/2 x 5 1/8	31.25	L	C	3	PC	Own	Del	Del	D-Own	Own	M-Spi	F-Own	4.54	B-F	I-R	Mec	Own	N-54
Case.....X	122	32x4 1/2	Yes*	Cont	8R	6-3 1/2 x 4 1/2	27.34	L	C	4	PC	Ray	Del	Del	D-Own	Own	R-Sne	1 1/2 Col	4.90	E-R	I-R	Hyd	Jac	S-50 1/2
Case.....JIC	122	32x4 1/2	Yes*	Cont	8R	6-3 1/2 x 4 1/2	27.34	L	C	4	PC	Sch	Del	Del	D-Own	Own	R-Sne	1 1/2 Col	4.90	E-R	I-R	Hyd	Lav	S-55
Case.....Y	132	33x5	Yes*	Cont	6T	6-3 1/2 x 5 1/4	31.54	L	C	4	PC	Sch	Del	Del	D-Own	Own	R-Sne	3/4 Col	4.45	E-R	I-R	Hyd	Jac	S-57
Chandler.....SS	123	33x6.0	Yes	Own	SS	6-3 1/2 x 5	29.40	L	C	4	PC	Sch	Bos	Bos	P-B&B	Own	R-Own	3/4 Own	4.45	E-F	E-T	Mec	Own	S-58 1/2
Chevrolet....."K"	103	30x3 1/2	Yes*	Own	"K"	4-3 1/2 x 4	21.76	I	C	3	PS	Zen	Rem	Rem	P-Own	Own	M-Own	1 1/2 Own	3.82	E-R	I-R	None	Own	S-54
Chrysler.....Six	112 3/4	30x5.7	Yes	Own	Six	6-3 1/2 x 4 3/4	21.60	L	A	7	PC	Bal	Rem	Rem	D-Own	Own	M-Uni	1 1/2 Own	4.60	E-F	E-T	Hyd	Jac	S-51 1/2
Cleveland....."31"	108 1/2	30x4.7	Yes	Own	"31"	6-2 7/8 x 4 1/4	19.84	L	C	3	PC	Joh	Bos	Bos	P-B&B	Own	R-Pic	1 1/2 Own	4.90	E-R	E-T	Mec*	CAS	S-50
Cleveland.....43	115	31x5.2	Yes	Own	43	6-3 1/2 x 4 1/4	23.44	L	C	3	PC	Sch	Bos	Bos	P-B&B	Own	R-Sne	1 1/2 Own	4.90	E-R	E-T	Mec*	CAS	S-53
Cole.....Master	127	34x7.3	Yes	Nor	311	8-3 1/2 x 4 1/2	39.20	L	A	3	PC	Joh	Del	Del	D-Nor	Nor	M-Spi	F-Col	4.70	E-R	I-R	None	Gem	S-57
Cunningham.....V-6	132	33x5	Yes*	Own	V-6	8-3 1/2 x 5	45.00	L	C	3	FP	Str	Del	Del	D-Own	Own	R-Sne	F-Tim	4.23	E-R	I-R	None	Gem	J-62
Dagmar.....6-60	118	32x4 1/2	Yes*	Cont	8R	6-3 1/2 x 4 1/2	27.34	L	C	4	PC	Sea	Del	Del	P-B&B	War	M-Spi	1 1/2 Tim	5.10	E-R	E-T	None	Gem	S-52
Dagmar.....6-70	138	33x5	Yes*	Cont	6J	6-3 1/2 x 5	33.75	L	C	4	PC	Sch	Del	Del	D-B-L	B-L	M-Spi	1 1/2 Tim	4.90	E-R	I-R	None	Gem	S-52
Daniels.....24-38	138	33x5	Yes*	Own	24-38	8-3 1/2 x 5 1/4	39.20	L	C	3	PC	Zen	Del	Del	P-Own	Own	M-Spi	1 1/2 Tim	4.23	E-R	I-R	None	Ros	S-52
Davis.....90	115	31x5.2	Yes	Cont	7U	6-3 1/2 x 4 1/4	23.44	L	C	4	PC	Str	Del	Del	P-B&B	W-G	M-Pet	1 1/2 Tim	5.10	E-F	I-R	Hyd	Ros	S-52
Davis.....91	118	30x5.7	Yes	Cont	8R	6-3 1/2 x 4 1/2	27.34	L	C	4	PC	Str	Del	Del	P-B&B	W-G	M-Pet	1 1/2 Tim	5.10	E-F	I-R	Hyd	Ros	S-52
Dodge Brothers.....	116	30x5.7	Yes	Own	.....	4-3 3/8 x 4 1/2	24.03	L	A	3	Sp	Ste	N.E	N.E	D-Own	Own	M-Own	1 1/2 Own	4.16	E-R	I-R	None	Own	S-55
Dorris.....	132	32x6.2	Yes	Own	6-80	6-4 1/2 x 5	38.40	I	C	7	FP	Str	Bos	Bos	D-Own	War	R-Spi	1 1/2 Tim	4.23	E-R	I-R	None	Own	S-60
Duesenberg Straight....."8"	141	33x5	Yes	Own	"A"	8-2 1/2 x 5	26.45	I	A	3	PC	Str	Bos	Bos	P-Own	War	R-Clc	1 1/2 Own	4.90	I-F	E-T	Hyd	Ros	S-59
Dupont.....D	124	32x6.2	Yes	Wis	Y	6-3 1/2 x 5	27.34	I	C	3	PC	Sch	Bos	Bos	D-Lon	Cpl	M-Uni	1 1/2 Eat	4.70	E-F	I-T	Hyd	Jac	S-59
Durant.....A-22	109	31x4	Yes*	Cont	Spec	4-3 1/2 x 4 1/4	24.03	I	A	3	PC	Til	A-L	A-L	P-Own	War	M-Spi	1 1/2 Own	4.33	E-R	I-R	Mec*	Own	S-50 1/2
Elcar.....4-41	112	31x4	Yes*	Lyc	CF	4-3 3/8 x 5	21.03	L	A	5	PC	Zen	A-L	A-L	P-B&B	W-G	M-Mec	1 1/2 Sal	4.70	E-R	E-T	Mec*	Ros	S-51
Elcar.....6-51	113	31x4	Yes*	Cont	7U	6-3 1/2 x 4 1/4	23.44	L	C	4	PC	Str	A-L	A-L	P-B&B	W-G	M-Mec	1 1/2 Sal	4.70	E-R	E-T	Mec*	Ros	E-51
Elcar.....8-80	127	32x6.2	Yes	Lyc	h	8-3 1/2 x 4 1/2	31.25	L	C	5	PC	Sch	Del	Del	P-B&B	W-G	M-Spi	3/4 Sal	4.71	E-F	E-T	Hyd	Ros	S-58
Essex.....6	110 1/2	31x5.2	Yes	Own	6	6-2 1/2 x 4 1/4	17.32	L	A	3	Sp	Ste	Bos	Bos	D-Own	Own	M-Spi	3/4 Own	5.60	E-R	I-R	None	Own	S-54 1/2
Flint.....40	115	30x5.2	Yes	Cont	6-W	6-3 1/2 x 4 1/4	23.44	L	C	4	PC	Car	A-L	A-L	P-Own	War	M-Spi	3/4 Ad	4.77	E-F	E-T	Hyd	Ros	S-50
Flint.....55	120	32x6.2	Yes	Cont	55	6-3 1/2 x 5	27.34	L	C	7	PC	Str	Del	Del	P-Own	War	M-Spi	3/4 Ad	4.77	E-F	E-T	Hyd	Ros	S-55
Ford.....T	100	30x3 1/2	Yes*	Own	T	4-3 3/4 x 4	22.50	L	C	3	Sp	(Own Kin)	Own	Own	D-Own	Own	M-Own	1 1/2 Own	3.63	E-T	I-R	None	Own	O-43 1/2
Franklin.....11 A	119	31x5.2	Yes	Own	11-A	6-3 1/4 x 4	25.35	I	A	7	PC	Str	Dyn	Dyn	P-B-L	Own	M-Spi	1 1/2 Own	4.73	E-T	E-R	None	Own	E-38
Gardner.....Series 5	112	31x5.2	Yes	Lyc	CE	4-3 1/4 x 5	21.73	L	C	5	PC	Zen	Wes	Wes	P-B&B	Mec	M-Pet	3/4 Fli	4.80	I-R	I-R	None	Ros	S-51
Gardner....."6-A"	117	30x5.2	Yes	Lyc	S	6-3 1/2 x 4 1/2	23.44	L	I	4	PC	Sch	Wes	Wes	P-B&B	Mec	M-Pet	1 1/2 Col	4.80	E-F	E-T	Mec	Gem	S-57
Gardner....."8-A"	125	30x5.7	Yes	Lyc	2-H	8-3 1/2 x 4 1/2	28.80	L	C	5	PC	Sch	Rem	Rem	P-B&B	Mec	M-Mec	1 1/2 Col	4.70	I-F	E-T	Mec	Gem	S-57
Gray.....O	104	30x3 1/2	Yes*	Own	R	4-3 3/8 x 4	21.03	L	C	3	Sp	Sco	A-L	A-L	P-Own	Det	R-Sne	1 1/2 Tim	3.90	I-R	E-T	None	Own	Q-30
H.C.S.....Series 6	126	33x5	Yes*	Own	6	6-3 1/2 x 5	29.40	I	C	3	FP	Str	Del	Del	D-B-L	B-L	M-Spi	3/4 Own	4.63	I-R	I-R	None	Gem	S-56
Haynes.....60	121	33x5.7	Yes	Own	60	6-3 1/2 x 4 3/4	29.40	L	C	3	PS	Ray	Del	Del	D-War	Mec	M-Uni	1 1/2 Own	4.41	E-R	E-T	None	Jac	S-54 1/2
Hertz.....D-1	114	31x4	Yes	Cont	7U	6-3 1/2 x 4 1/4	23.44	L	C	3	PS	Ray	Del	Del	D-Lon	Det	M-Spi	1 1/2 Tim	4.72	E-R	E-T	None	Ros	S-56
Hudson.....Super 6	127 3/8	33x6.2	Yes	Own	6	6-3 1/2 x 5	29.40	L	A	4	Sp	Det	Bos	Bos	D-Own	Own	M-Spi	3/4 Own	4.45	E-R	I-R	None	Gem	S-57 1/2
Hupmobile.....Series R	115	31x5.2	Yes	Own	R	4-3 1/2 x 5 1/8	16.90	L	C	3	PC	Str	Wes	Wes	P-Lon	Own	M-Uni	1 1/2 Own	4.90	E-R	I-R	None	Own	S-56 1/2
Hupmobile.....E-1	118 1/4	33x6.0	Yes	Own	E	8-2 1/2 x 4 3/4	2																	



Cross Off These Prospects—Forever!

This advertisement is written to manufacturers who make and dealers who handle cars not equipped with Lockheed Hydraulic Four-Wheel Brakes. We quote a noted motor car dealer:

"To the owner of a car equipped with Lockheed Hydraulics, his brakes are more than just a set of brakes.

"They become with him a determining factor in his future selection of a car.

"It is plain to anyone who has talked with any number of owners of Lockheed Hydraulic equipped cars, and those who have ridden in or driven such cars, that they will confine their future choice to cars equipped with Lockheed Hydraulics."

This simply means that manufacturers and dealers whose cars lack the advantages of Lockheed Hydraulic Brakes must automatically cross off from their lists of possible prospects, this year, approximately 250,000 motor car owners.

This number is increasing enormously each year.

The result of this situation will be to increase greatly, the prosperity of manufacturers and dealers whose cars are equipped with Lockheed Hydraulic Four-Wheel Brakes.

HYDRAULIC BRAKE COMPANY
5835 Russell Street Detroit, Michigan

The Answer
LOCKHEED HYDRAULIC
Four Wheel Brakes

Current Passenger Car Specifications

(This list comprises cars distributed on a national basis)

MAKE AND MODEL	Wheelbase (Ins.)	TIRES		ENGINE										Electrical System		Clutch	Gear-set	Universal Joints	REAR AXLE		BRAKES			Steering Gear	Rear Springs
		Standard Size (Ins.)	Balloon Equipment	Make	Model	Number of Cylinders, Bore and Stroke (Ins.)	Rated Horsepower, N.A.C.C.	Valve Arrangement	Piston Material	Number of Main Crankshaft Bearings	Oiling System	Carburetor Make	Ignition System Make	Generator and Starter Make	Type and Make				Make	Type and Make	Type and Make	Gear Ratio	Foot, Type and Location			Hand, Type and Location	Four-Wheel Brake, Type	Make	Type and Length
Paige Peerless.....70	131	33x6.7	Yes	Cont Own	10A 70	6-3 1/2 x 5	33.75	L C	4	PC	Joh	A-K Del	Rem Del	D-Lon D-Own	W-G Own	M-Mec M-Spi	1 1/2 Sal 3/4 Tim	4.90 4.63	E-R E-F	E-T I-R	Hyd* Hyd	Gem Gem	S-61 1/2 S-54		
Peerless, Equipped "8"	123	33x6.6	Yes	Own	67	8-3 1/4 x 5	33.80	L C	3	PC	Str	Del	Del	D-Own	Own	M-Spi	3/4 Tim	4.90	E-R	I-R	Hyd	Gem	S-56		
Pierce-Arrow.....33	138	33x5	No	Own	33	6-4 x 5 1/2	38.10	T C	7	FP	Own	Del	Del	D-Own	Own	M-Spi R-Goo	1 1/2 Tim	4.29	E-R	I-R	Hyd Mec*	Gem	S-64 1/2		
Pierce-Arrow....."80"	130	32x5.7	Yes	Own	"80"	6-3 1/2 x 5	29.40	L C	7	FP	Own	Del	Del	P-B&B	B-L	M-Spi	1 1/2 Tim	4.45	I-F	I-R	Mec	Gem	S-56 1/2		
Reo.....T6	120	32x6.2	Yes	Own	T6	6-3 1/2 x 5	24.31	G A	4	PS	Sch	NE	NE	D-Own	Own	M-Own R-Own	1 1/2 Own	4.70	E-R	I-R	None	Own	S-54 1/2		
Revere....."M"	131	32x4 1/2	Yes*	Mons.	"M"	4-4 1/2 x 6	31.63	H A	2	PC	Str	Bos	Wes	D-B-L	B-L	M-Spi	1 1/2 Own	3.44	I-R	E-R	.....	Gem	S-56 1/2	
Revere.....25	131	32x6.2	Yes	Cont	6-J	6-3 1/2 x 5	33.75	H C	4	PC	Sch	Bos	Wes	D-Ful	Ful	M-Spi	1 1/2 Col	3.75	I-F	E-T	Mec	Gem	S-56 1/2		
Rickenbacker.....D	117	31x5.2	Yes	Own	D	6-3 1/4 x 4 1/2	25.35	L C	7	PC	Str	Bos	Bos	D-Own	W-G	M-Mec	1 1/2 Col	4.63	I-F	E-T	Mec	Gem	S-57		
Rickenbacker.....A	121 1/2	32x5.7	Yes	Own	A	8-3 x 4 1/2	28.60	L C	9	PC	Zen	Del	Bos	D-Own	W-G	M-Mec	1 1/2 Own	5.10	I-F	E-T	Mec	Gem	S-50		
Roamer.....6-54-E	118 1/2	32x4 1/2	No	Cont	12XD	6-3 1/2 x 5 1/4	29.40	L A	3	PS	Str	Spl	Wes	P-B&B	Ful	R-M&E	3/4 Tim	4.45	E-R	I-R	Mec*	Jae	V-55 1/2		
Roamer.....4-75-E	128	32x4 1/2	No	Dues	G1	4-4 1/2 x 6	28.90	H A	3	FP	Str	Bos	Wes	D-B-L	B-L	R-M&E	3/4 Tim	4.63	E-R	I-R	Mec*	Jae	V-55 1/2		
Rollin.....G-2	112	31x5.2	Yes	Own	G	1-3 1/4 x 4 1/2	16.90	L A	4	PC	Til	Con	Dyn	P-B&B	Mun	R-Own	1 1/2 Sal	5.10	I-F	I-F	Mec	Ros	O-46		
Rolls-Royce.....40-50	143 1/2	33x5	No	Own	40	6-4 1/2 x 4 1/2	48.60	L A	7	FP	Own	Bos	Wes	K-Own	Own	M-Own	F Own	3.72	I-R	I-R	None	Own	S-54 1/2		
Stanley.....252	122	31x4.9	Yes	Own	252	2-4 x 5	20.00	X C	2	Sp	Non	Non	Bos	Non	Non	R-The	1 1/2 Own	4.50	E-F	I-R	Hyd	Ros	S-58		
Star.....A	102	30x3 1/2	Yes*	Cont	Spec	1-3 1/4 x 4 1/2	15.63	L C	3	PK	Til	A-L	A-L	P-Own	Own	M-Spi	1 1/2 Own	4.87	E-R	I-R	Mec*	Own	S-49 1/2		
Stearns Knight.....C	121	33x6	Yes	Own	K 1	6-3 1/4 x 5	25.35	X A	4	PC	Joh	Del	Del	D-M&E	Own	R-Chi	1 1/2 Eat	5.30	E-R	I-R	Hyd*	Ros	V-50		
Stearns Knight.....B	119	33x1 1/2	Yes*	Own	K 1	1-3 1/4 x 5 1/2	22.50	X A	3	PC	Sch	Own	Own	D-Own	Own	R-Chi	1 1/2 Own	4.50	E-R	I-R	Hyd*	Own	V-50		
Stearns Knight.....S	130	33x6.6	Yes	Own	K 1	6-3 1/2 x 5	29.40	X A	4	PC	Joh	Del	Del	D-M&E	Own	R-Chi	1 1/2 Own	4.90	E-R	I-R	Hyd	Ros	V-50		
Sterling Knight.....	125	32x4 1/2	Yes*	Own	K 1	6-3 1/4 x 5 1/2	25.35	X C	7	FP	Str	Wes	Wes	D-Ful	Ful	R-Chi	1 1/2 Tim	5.10	E-R	I-R	Hyd*	Ros	S-58		
Stevens-Duryea.....G	113	33x5	Yes*	Own	G	6-4 1/2 x 5 1/2	47.25	L C	4	PS	Str	Bos	Bos	D-B-L	B-L	M-Spi	1 1/2 Tim	3.76	E-R	I-R	None	Ros	J-53 1/2		
Studebaker.....Sta. Six	113	31x5.2	Yes	Own	ER	6-3 1/2 x 4 1/2	27.34	L C	4	PC	Str	Wag (Rem)	Wag (Rem)	P-Own	Own	R-The	1 1/2 Own	4.18	E-R	E-T	Hyd*	Own	S-50 1/2		
Studebaker.....Spec. Six	120	32x6.2	Yes	Own	EQ	6-3 1/2 x 5	29.40	L C	4	PC	Str	Wag (Rem)	Wag (Rem)	P-Own	Own	M-Spi	1 1/2 Own	4.36	E-R	E-T	Hyd*	Own	S-56		
Studebaker.....Big Six	127	31x7.3	Yes	Own	EP	6-3 1/2 x 5	36.01	L C	4	PC	Bal	Wag (Rem)	Wag (Rem)	P-Own	Own	M-Spi	1 1/2 Own	3.69	E-R	E-T	Hyd*	Own	S-56		
Stutz.....693-4	120	32x6.2	Yes	Own	691	6-3 1/2 x 5	29.40	I B	3	PC	Str	Rem	Rem	P-B&B	W-G	M-Mec	3/4 Tim	4.63	E-F	E-T	Hyd	Gem	S-52		
Stutz.....695	130	32x6.7	Yes	Own	691	6-3 1/2 x 5	29.40	I B	3	PC	Str	Rem	Rem	P-B&B	W-G	M-Mec	3/4 Tim	4.90	E-F	I-R	Hyd	Gem	S-52		
Templar.....	122	33x4	No	Own	50	6-3 1/2 x 4 1/2	27.34	L C	4	PS	Til	Dyn	Wes	P-M&E	W-G	R-Sue	3/4 Sal	5.10	I-F	E-T	Mec	Ros	S-51		
Vette.....60	118	31x5.2	Yes	Own	50	6-3 1/2 x 4 1/2	24.38	L C	4	PS	Til	Dyn	Wes	P-B&B	Mun	M-Uni	1 1/2 Own	5.10	E-F	E-T	Hyd	Ros	S-55		
Westcott.....44	120	32x6.2	Yes	Cont	8R	6-3 1/2 x 4 1/2	27.34	L C	4	PC	Str	Del	Del	P-B&B	W-G	M-Cle	1 1/2 Col	4.90	E-R	E-T	Hyd*	Gem	S-57 1/2		
Westcott.....60	118	32x6.2	Yes	Cont	8R	6-3 1/2 x 4 1/2	27.34	L C	4	PC	Str	Del	Del	P-M&E	W-G	M-Cle	1 1/2 Col	4.63	E-R	E-T	Hyd*	Gem	S-56		
Wills Ste. Claire. ABC68	121	32x6.2	Yes	Own	ABC	8-3 1/4 x 4	33.80	I C	3	FP	Zen	Del	Del	P-Own	Own	M-Spi	1 1/2 Eat	4.90	E-F	I-R	None	Own	S-54 1/2		
Wills Ste. Claire. "W-6"	128	33x6.0	Yes	Own	"W-6"	6-3 1/4 x 5 1/2	25.35	I C	7	PC	Zen	Del	Del	P-Own	Own	M-Spi	3/4 Eat	4.90	E-F	E-T	Hyd	Own	S-58		
Willys Knight.....65 & 67	124	33x1.9	Yes	Own	65	4-3 1/2 x 4 1/2	21.03	X C	3	PS	Til	A-L	A-L	D-Own	Own	R-Own	3/4 Own	4.44	E-R	I-R	None	Own	S-55		
Willys Knight....."66"	126	32x6.2	Yes	Own	"66"	6-3 1/4 x 4 1/2	25.35	X A	7	PC	Til	A-L	A-L	D-Own	Own	M-Mec	1 1/2 Own	5.11	B-F	E-R	Mec	Own	S-57 1/2		
TAXICABS																									
Checker.....	117	33x4 1/2	No	Buda	WTU	4-3 1/2 x 5 1/2	22.50	L C	3	PC	Zen	Sci	Wes	D-Ful	Ful	Blo	3/4 Col	4.87	E-R	I-R	None	Jon	S-57 1/2		
Driggs.....	108 1/2	30x3 1/2	No	Own	.....	4-2 3/4 x 4 1/2	11.03	L C	.....	PS	Zen	Bos	Bos	D-Ful	Ful	Spi	3/4 Own	4.74	E-R	I-R	None	Own	S-
Elcar.....4	112	31x4	Yes*	Lycor	CF	4-3 3/8 x 5	21.03	L A	5	PC	Zen	A-L	A-L	P-B&B	W-G	M-Mec	1 1/2 Sal	4.75	E-R	E-T	Mec*	Ros	S-51		
H.C.S.....	110	20x4 1/2	No	Wauk	Z	1-3 1/4 x 4 1/2	16.90	L I	3	FP	Zen	Bos	Bos	P-B&B	.....	M-Mec	3/4 Own	.....	I-R	E-T	.....	Ros	S-
Kelsey.....E	112	32x4	No	Lycor	CH	4-x 3 1/2	19.60	L A	5	PC	Zen	Bos	Bos	P-B&B	W-M	M-Spi	3/4 Sal	5.10	E-R	I-R	None	Lav	S-55		
Luxor....."Lux"	118	33x4 1/2	No	Buda	WTU	4-3 1/2 x 5 1/2	22.50	L C	.....	Zen	Zen	Bos	Bos	D-Ful	Ful	M-Spi	1 1/2 Col	.....	E-R	E-T	None	Gem	S-56 1/2
Pennant.....	115	33x4 1/2	No	Buda	WTU	4-3 1/2 x 5 1/2	22.50	L B	3	PC	Zen	Bos	Bos	D-Ful	Ful	Blo	3/4 Col	4.87	E-R	I-R	None	Jon	S-57		
Premier.....4-B	112	30x5	Yes*	Buda	WTU	4-3 1/2 x 5 1/2	22.50	L B	3	PC	Zen	Bos	Bos	P-B&B	Mun	Pie	3/4 Col	4.70	E-F	E-T	Mec	Ros	S-57 1/2		
Rauch & Lang.....T	112	32x4	No	Buda	WTU	4-3 1/2 x 5 1/2	22.50	L C	3	Sp	Zen	Bos	Dyn†	D-Dtl	Det	Spi	1 1/2 Sta	5.10	E-R	E-T	None	Gem	S-59 1/2		
Rauch & Lang**.....	102	33x4 1/2	No	Own	.....	Electric	.....	.....	.....	.....	.....	.....	.....	None	None	Own	Own	8.60	.....	.....	None	None	S-
Reo.....	113	32x4 1/2	Yes*	Own	T-6	4-3 1/2 x 5	24.30	G A	4	PS	Sch	N-E	N-E	D-Own	None	Own	1 1/2 Own	4.70	E-R	I-R	None	Own	S-54		
Traveler.....	108 1/2	32x4	No	Buda	WTU	4-3 1/2 x 5 1/2	22.50	L B	3	PC	Zen	Eis	Eis	D-Dtl	W-M	Spi	Col	.....	E-R	I-R	None	Gem	S-	
Willys Knight.....A.B.C.	118	32x4 1/2	Yes*	Own	64	4-3 3/8 x 4 1/2	21.03	X C	3	PS	Til	A-L	A-L	D-Own	Own	Own	3/4 Own	5.12	E-R	I-R	None	Own	S-55		
Yellow.....O-4	109	32x4 1/2	No	Cont	V7	4-3 1/2 x 5	22.50	L C	3	Sp	Zen	Bos	N-E†	D-B-L	B-L	Spi	3/4 Tim	4.90	E-R	E-T	None	Gem	S-56		
Yellow.....A-2	109	29x4 1/2	Yes	Cont	V7	4-3 1/2 x 5	22.50	L C	3	Sp	Zen	Bos	N-E†	D-B-L	B-L	Spi	3/4 Tim	4.90	E-R	E-T	None	Gem	S-56		

TAXICABS

ABBREVIATIONS—

**—Electric
 †Generator only
 *—At extra cost
 ‡—On Phaeton models
 A—Aluminum
 Anst—Ansted
 Ad—Adams
 A-K—Atwater-Kent
 A-L—Auto-Lite
 B—Semi Steel
 Bal—Ball & Ball
 B & B—Borg & Beck
 B-F—Both Internal and External Four Wheels
 Bij—Bijur
 B-L—Brown-Lipe
 Blo—Blood
 Bos—Bosch
 C—Cast Iron
 Car—Carter
 CH—Climax
 Col—Columbia
 Con—Connecticut
 Cont—Continental
 Cpl—Campbell
 D—Multiple Disc

Del—Delco
 Det—Detroit
 De J—De Jon
 Dit—Dirwiller
 Doo—Dooley
 Dtl—Detlaff
 Dues—Duesenberg
 Dur—Durstun
 Dyn—Dyneto
 E—Full Elliptic
 E-F—External Four Wheels
 E-R—External Rear Wheels
 E-T—External Transmission
 Eat—Eaton
 F—Full Floating
 Fall—Falls
 FH—Flint
 FP—Full Pressure to all bearings including wrist pins
 Ful—Fuller
 1/2 F—Semi-Floating
 3/4 F—Three-Quarter Floating
 G—Head and Side
 G-D—Gray & Davis
 Gem—Gemmer
 G-L—Grant-Lees
 Goo—Goodrich

H—Horizontal
 Har—Hart
 Hol—Holley
 Hoo—Hoosier
 H-Sp—Herschell-Spillman
 Hyd—Hydraulic
 I—In Head
 I-F—Internal Four Wheels
 I-R—Internal Rear Wheels
 J—Three-Quarter Elliptic
 Jac—Jacox
 Jax—Jaxon
 Joh—Johnson
 Jon—Jones
 K—Cone
 Kin—Kingston
 L—L Head
 Lav—Lavine
 Lon—Long
 L-N—Leece-Neville
 Lyco—Lycoming
 Mar—Marvel
 M—Metal
 M & E—Merchant & Evans
 Mec—Mechanics
 Mons—Monson
 Mun—Muncie

N—Platform
 Non—None
 N. E.—North East
 Nor—Northway
 O—Special Type
 Opt—Optional
 P—Single Plate
 PC—Pressure to all Crankshaft and connecting rod bearings
 Pen—Penfield
 Pet—Peters
 Pic—Pick
 PK—Pressure to Crankshaft, Connecting Rods, and Camshaft Bearings
 PS—Splash and Pressure
 Q—Quarter Elliptic
 R—Fabric
 Ray—Rayfield
 Rem—Remy
 Roe—Rockford
 Ros—Ross
 S—Semi Elliptic
 Sal—Salisbury
 Sch—Schebler
 Sci—Scintilla
 Sco—Scoe

Sne—Snead
 Sp—Circulating Splash
 Spe—Special
 Spi—Spicer
 Spl—Splindorf
 S. E.—Standard Equipment
 Sta—Standard
 Ste—Stewart
 Stil—Sterling
 Str—Stromberg
 T—T Head
 The—Thermoid
 Thi—Thiener
 Til—Tillotson
 Tim—Timken
 Uni—Universal
 Uds—Universal Drive Shaft
 V—Cantilever
 W-G—Warner Gear
 W-M—Willys-Morrow
 Wag—Wagner
 War—Warner
 Weld—Weldley
 Wes—Westinghouse
 Wis—Wisconsin
 X—Sleeve
 Zen—Zenith

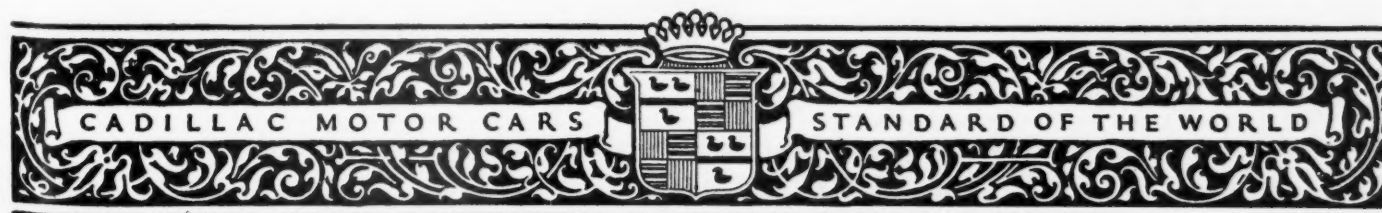
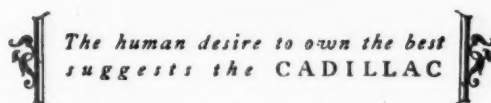


Motor Car Dealers

are making application to **CADILLAC**
for contracts in greater numbers today than at any time in the past five years. Financial stability, consistency in manufacturing and merchandising, public favor and acknowledged eight-cylinder leadership are the reasons.

CADILLAC MOTOR CAR COMPANY, DETROIT, MICH.
Division of General Motors Corporation

CADILLAC



Our Plan of Helpfulness



Creating Public Desire To Equip With Stewart-Warner Accessories

A scientifically worked out plan to cover the nation—reaching the present car owners—influencing the new car buyer—and showing the importance of fully equipping the new car at the time of purchase.

It includes a powerful series of pages in the Saturday Evening Post to give complete coverage for city dealers! Another series of pages in the Country Gentleman, and Christian Herald to reach the country dealer's field.

It multiplies sales for the dealer. It is the greatest influence that is possible to obtain. You can profit by it!



Stewart-Warner Speedometer
Special Model for Fords
Colored dials tell when to lubricate
Complete, \$15.00
West of 100° Meridian, \$15.50



Stewart-Warner Spotlight
For Open or Closed Cars \$4.25



Stewart Electric Motor Horn
Complete, \$5.00
West of 100° Meridian, \$5.25



Stewart Rear Vision Mirror
For open or closed cars
Complete, \$2.00



De Luxe Double Bar Bumper
Black-enameled bars, \$21.00
West of 100° Meridian, \$24.00
Nickel-plated bars, \$25.00
West of 100° Meridian, \$28.00

THERE'S A STEWART-WARNER SERVICE STATION NEAR YOU

Winning Tremendous Favor

IN last week's Motor Age we announced a "Plan of Helpfulness" for Dealers. This was preceded by two preliminary double page explanations. If you haven't read them, by all means get out your Motor Age issues of March 19, 26 and April 2, and read them carefully for they contain a message that you should not miss.

From all over the country come expressions of "That's what we want," "No one else so ably fitted to do this big thing," "It's a God-send to dealers," etc., etc.

The big idea is that we have evolved a real plan to help dealers move their stocks. Rather than load up a dealer and leave him to "sink or swim," we put him on deck with successful selling.

Every Stewart-Warner dealer should feel free to ask our Dealers' Information Bureau for help in merchandising ANY product on his floor or shelves.

Stewart-Warner Accessories must pass through the dealer's hands at a lively clip and leave a nice profit behind. It makes the Stewart-Warner line a big business asset to dealers.

STEWART-WARNER SPEEDOMETER CORPORATION
CHICAGO - U. S. A.

Stewart-Warner Accessories

You are
invited
to put your
selling
problems
up to our
Dealers'
Information
Bureau

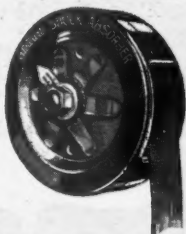
Some of your problems
we will help you solve

Turnover
Overhead
Stock
Display
Buying
Advertising
Merchandising

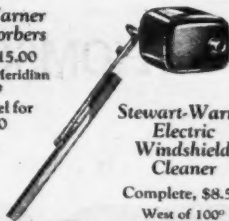
Write to Stewart-Warner Dealer
Information Bureau, 1826 Diversey Blvd., Chicago



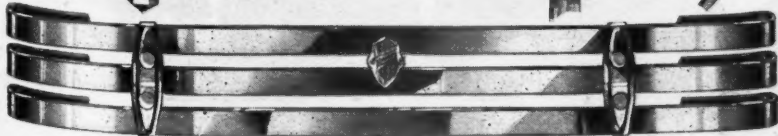
Stewart-Warner
Miniature
Spotlight
Prices range from
\$9.00 to \$12.50



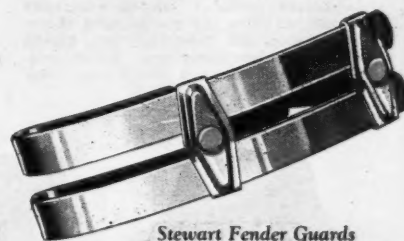
Stewart-Warner
Shock Absorbers
Per pair, \$15.00
West of 100° Meridian,
\$15.50
Special Model for
Fords, \$11.50
West of 100°
Meridian,
\$12.00



Stewart-Warner
Electric
Windshield
Cleaner
Complete, \$8.50
West of 100°
Meridian, \$8.75



De Luxe Triple Bar Bumper
Black-enameled bars, \$32.00
West of 100° Meridian, \$35.00
Nickel-plated bars, - 37.50
West of 100° Meridian, \$40.50



Stewart Fender Guards
Black-enameled bars, per pair, \$23.00
West of 100° Meridian, \$26.00
Nickel-plated bars, per pair, \$25.00
West of 100° Meridian, \$28.00

62 DISTRIBUTING CENTERS ACROSS THE CONTINENT

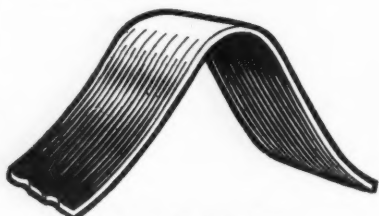


There Is Only One GENUINE Innering

SPECIAL PLAN

Good jobbers can try out Genuine APEX Innerings in an economical way. We carry the financial load during this try-out period. Write for the details of this plan today.

DEALERS — No good jobber will substitute but be sure and mention "APEX" when ordering—and be safe.



Rounded Points

The broad rounded points of contact FOUND ONLY ON GENUINE APEX INNERINGS, cannot break. This is not the case where a sharp bend is necessary to avoid infringing on the Apex patent.



Reverse Curves

The long reverse curves, FOUND ONLY ON GENUINE APEX INNERINGS, gently hold the piston rings in place while the shorter rounded curves centralize and stabilize the pistons and thereby stop oil pumping and piston slap without exerting undue outward pressure on the piston ring.

APEX Innerings were the first ever made. Even the name "Innering" belongs to this company.

While others have copied the "innering" idea and borrowed the "innering" name they never can imitate the APEX Innering design.

Patented Design Protects You

No imitation can be made with our long reverse curves that cushion the piston slap. No imitation can use our broad rounded points of contact that make the ring face work true with the cylinder walls.

Genuine APEX are guaranteed to stop piston slap and oil pumping, renew power, increase pick-up and performance and save oil and gasoline.

The country's foremost jobbers stock APEX. They would have no other because they know through experience that it pays to sell you only genuine, guaranteed merchandise.

THOMSON MANUFACTURING CO.

DEPT. C, PEORIA, ILL.

APEX



Advertised in Saturday Evening Post

Genuine APEX are the only nationally advertised Innerings. To be able to advertise in The Saturday Evening Post any article must be guaranteed to do everything claimed for it.

National advertising has "sold" the APEX. It is the innering car owners want. Dealers and garagemen who co-operate with our national advertising are making big money on APEX Innering installations.

Guaranteed to Stop Oil Pumping, Piston Slap

Dozens of cars in your neighborhood need the APEX. Every oil pumping, piston slapping motor owner is a profit maker for you. Tell these car-owners the APEX story. Show them how, without reboring, they can have renewed power, faster pick-up, save gasoline, have better performance and no oil wastage or ruinous piston slap by merely installing one APEX Innering under each piston ring.

You get the profit on the APEX set, as well as profit on the installation work. And you can get 10 of these jobs to every one reboring job you can sell.

WRITE US TODAY

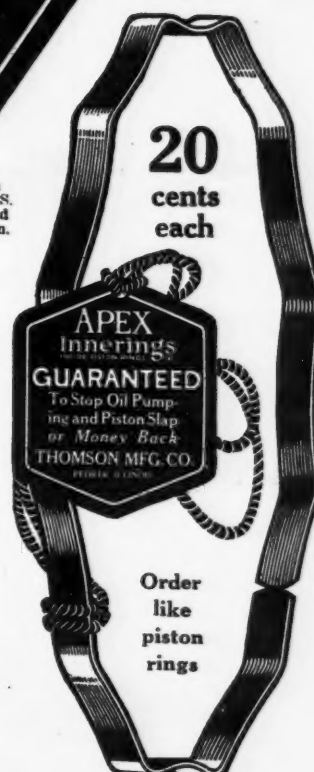
We will tell you how other car dealers get rid of trade-ins fast and how garage men make extra profits on the Apex.

THOMSON MFG. CO., Dept. C, Peoria, Ill.

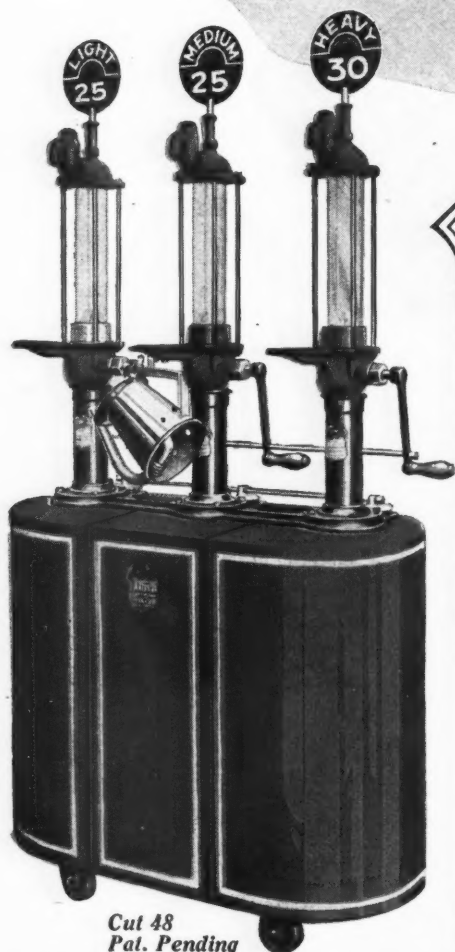


No imitation has a tag like this. If the innerings you get do not have this tag in the box they are not Genuine APEX. This tag is backed up by sufficient financial strength to protect jobber, dealer, garageman and car owner.

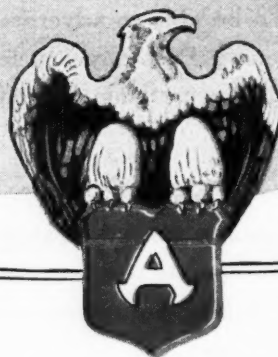
Pat.
in
U. S.
and
Can.



GENUINE Innerings



Cut 48
Pat. Pending



AMERICAN VISIBLE LUBES

The Standard of Excellence

The AMERICAN is the highest development in scientific lube equipment. The ONLY Lube combining ALL those features which experience has demonstrated are basic essentials of the perfect lube.

The ONLY Lube with absolutely non-drip nozzle—not a drop in 24 hours.

Because the AMERICAN is absolutely non-dripping, there is no return line to drain into tank and carry dust and dirt.

All working parts are in neck of lube and operate in oil, thoroughly protected from dust and dirt—and absolutely waterproof.

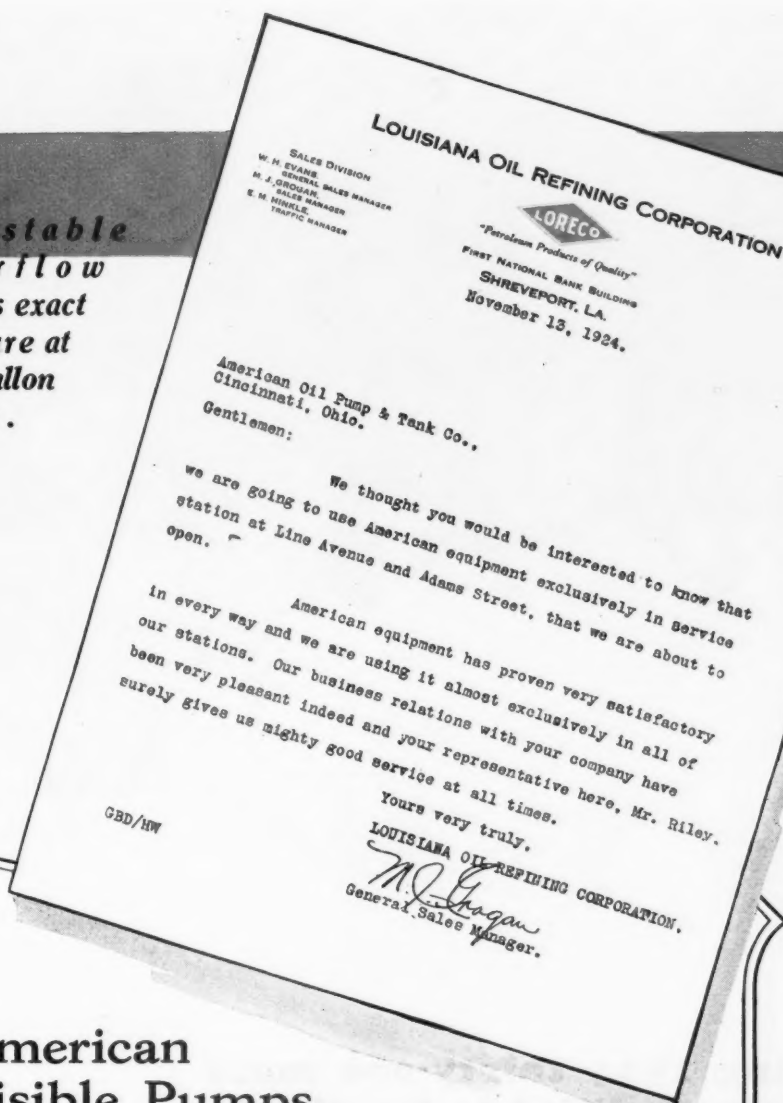
The long, thin, 3-inch visible glass cylinders show oils in clean and attractive manner and assure quick and surprisingly easy operation.

Oil Companies everywhere—after successful tests—are re-ordering AMERICAN LUBES. There's a reason.

The American Oil Pump & Tank Co. 1159 Findlay St.
CINCINNATI, O.

American *Visible*

**Adjustable
Overflow
insures exact
measure at
each gallon
mark.**



American Visible Pumps

Endorsed Wherever Used

The new AMERICAN Visible Pump—140-V has met with phenomenal success wherever introduced. Its simplicity—sturdiness—easy and quick action—and low cost—set new and advanced standards in pump efficiency and performance.

Fitted with special rotary type pump, with handle turning continuously in one direction—not back and forth. Fills 5 gallon container in 10 to 12 seconds with 15 turns of handle.

Adjustable overflow which may be set instantly assures exact accuracy at each gallon mark.

Fitted with either 5 or 10 gallon container and with Underwriter's Label if desired.

140-V offers you the maximum of pump value and efficiency. Try the 140-V and you will realize why it has the unanimous endorsement of users everywhere.



Cut
140-V
Pat.
Pend.

Equipment *for Gas & Oil*



**During 1924 thirty-one more
jobbers qualified to handle the
Multibestos line.**

**MULTIBESTOS COMPANY
WALPOLE, MASS. U. S. A.**

Branches: NEW YORK CHICAGO DETROIT NASHVILLE

MULTI

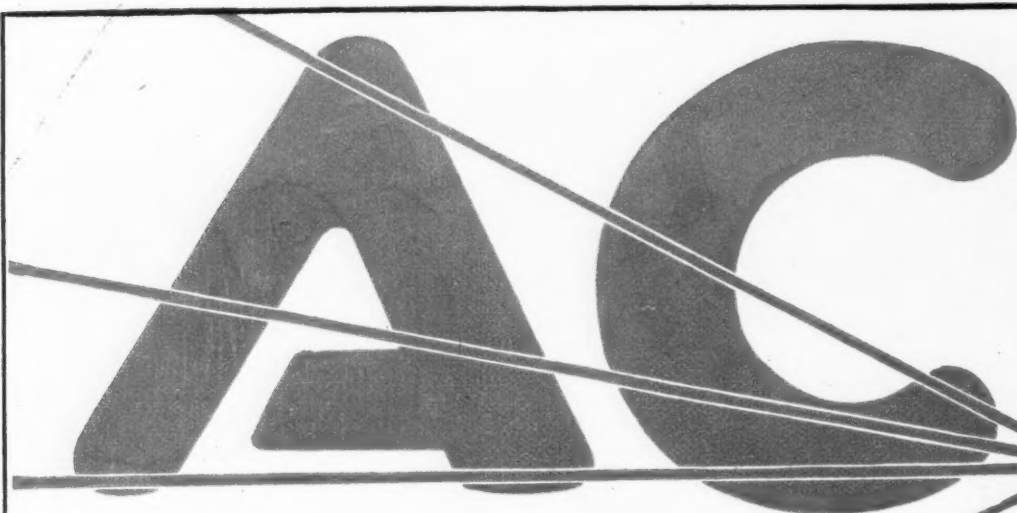
BRAKE



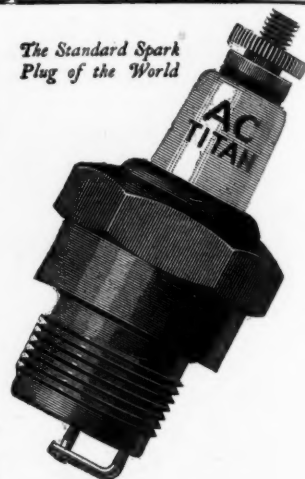
Multibestos TAXITRUX Brake Lining
Multibestos 229 Transmission Lining for Ford Cars
Multibestos SPECIAL Transmission Lining for Ford Cars
Multibestos NO-WIRE Transmission Lining for Ford Cars
Multibestos FIBRE Transmission Lining for Ford Trucks
Multibestos Lined Brake Shoes for Ford Cars
Multibestos Clutch Linings

BESTOS

LINING



The Standard Spark
Plug of the World



SPARK PLUGS

The foremost automotive engineers—experts on ignition—specify AC's as standard equipment for the reason that AC's perform best in the cars they build.

That's why more than 80% of all the cars produced in this country, exclusive of Ford, are factory equipped with AC Spark Plugs. Among these cars are:

Buick	Essex	Oakland
Cadillac	Flint	Oldsmobile
Chandler	Hudson	Paige
Chevrolet	Hupmobile	Star
Chrysler	Kissel	Westcott
Cleveland	Marmon	Wills-Sainte
Dodge Brothers	Maxwell	Claire
Durant	Nash	

Therefore, dealers who have a good assortment of AC Spark Plugs are assured a steady and profitable business because of their demand due to car equipment, backed up by good national advertising.

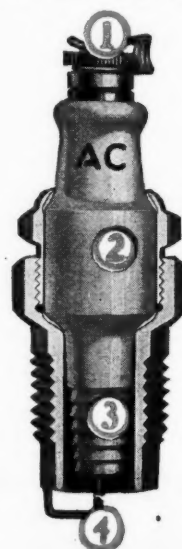
AC-SPHINX
Birmingham
ENGLAND

AC Spark Plug Company, FLINT, Michigan

Makers of AC Spark Plugs - AC Speedometers - AC Air Cleaners
U. S. Pat. No. 1,135,727, April 13, 1915; U. S. Pat. No. 1,216,139, Feb. 13, 1917
Other Patents Pending

AC-OLEO
Levallois-Perret
FRANCE

A good plug
for
FORDS
The
AC1075

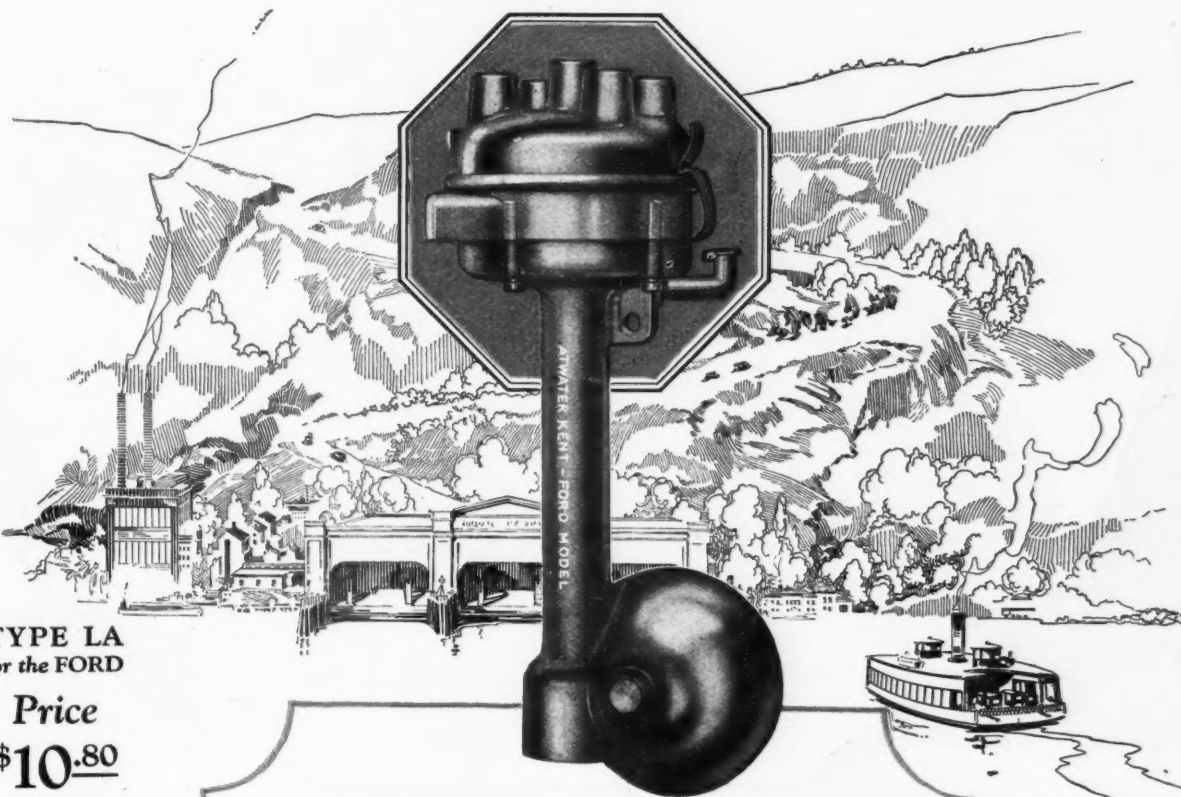


- 1 Spring Terminal Clip
- 2 Heavy Body Porcelain
- 3 High Temperature Fins. Patented Carbon-proof Porcelain
- 4 Drip Electrode Forms Natural Oil Drain

They satisfy Ford Owners and make money for the dealer.

ATWATER KENT

Ignition for FORDS



TYPE LA
for the FORD

Price
\$10.80

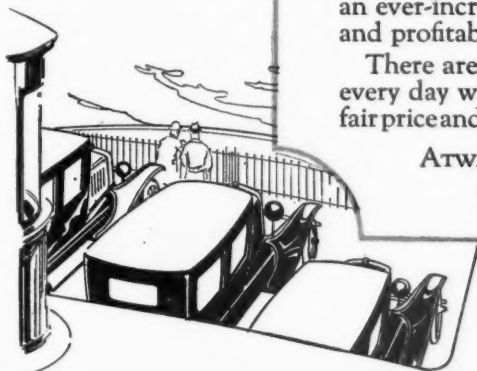
Including Cables
and Fittings

WITH ATWATER KENT Ignition, your sales possibilities are limited only by the number of Fords in your territory. Whether your customers' cars are new or have been driven thousands of miles, this dependable system offers instant and definite improvement in motor performance.

More and more dealers are realizing this, and through an ever-increasing demand are building up a permanent and profitable replacement business.

There are hundreds of Ford owners passing your door every day who are prospects. Let ATWATER KENT quality, fair price and easy installation turn them into profits for you.

ATWATER KENT MANUFACTURING COMPANY
4733 Wissahickon Ave., Philadelphia, Pa.



Metal Is What Counts!

Not the design

It makes no difference whether they are called inner rings, tension rings or shims, they look the same—but if the metal in them is not of the proper quality, scientifically heat treated to retain its resiliency and tension, the rings will not be efficient.

G-H Tension Rings are made of the highest grade of steel obtainable so tempered by our own special process that they will never lose their original resiliency and tension.

proved! by years of service

Built by pioneers in the manufacture of rings of this type, G-H Tension Rings have proved, by years of satisfactory service in cars of all makes and sizes, that the efficiency of a so-called inner ring lies wholly in the metal from which it is constructed. Experienced motor mechanics prefer the G-H Tension Ring because it can be relied on to cure piston troubles and keep them cured.

G-H TENSION RINGS

The G-H TENSION RING is, as its name implies, a TENSION Ring, not merely an inner ring or shim.

Manufactured by

G-H TENSION RING CO., Inc.

8 EAST MT. ROYAL AVENUE

BALTIMORE, MD.



Tension Rings



Brake Springs



Clutch Springs



Valve Springs

The AERMORE

TRADE MARK REG. U. S. PAT. OFF.

Exhaust Horn



The New Aermore Demonstrating Stand. Demonstrates the Aermore tone right in your store. Makes sales for you. Supplied to dealers without cost on our 1925 selling plan. Ask your jobber, or write us.

Are You Getting this Business?

Aermore Horn sales are increasing steadily. Average yearly sales increase during the last three years exceeds 40%.

Aermore performs a real service for the car owner. It's not simply an auxiliary horn and it's not a luxury. It's *THE Horn that opens the road*. Loud enough to reach ears of the driver on a noisy truck ahead; and its distinctive tone has a psychological effect which gets immediate results in any

traffic. Loud or soft, an imperative command, or a gentle warning—always “the signal with a smile”—courteous, pleasant, dependable.

There are many reasons why you should be selling Aermore Horns. We are creating a demand through the Saturday Evening Post and other publications. A stock of horns and an Aermore demonstrator will put you in position to cash in on this demand. Ask your jobber—or write us.

“The Signal
with
a Smile”

THE FULTON CO.

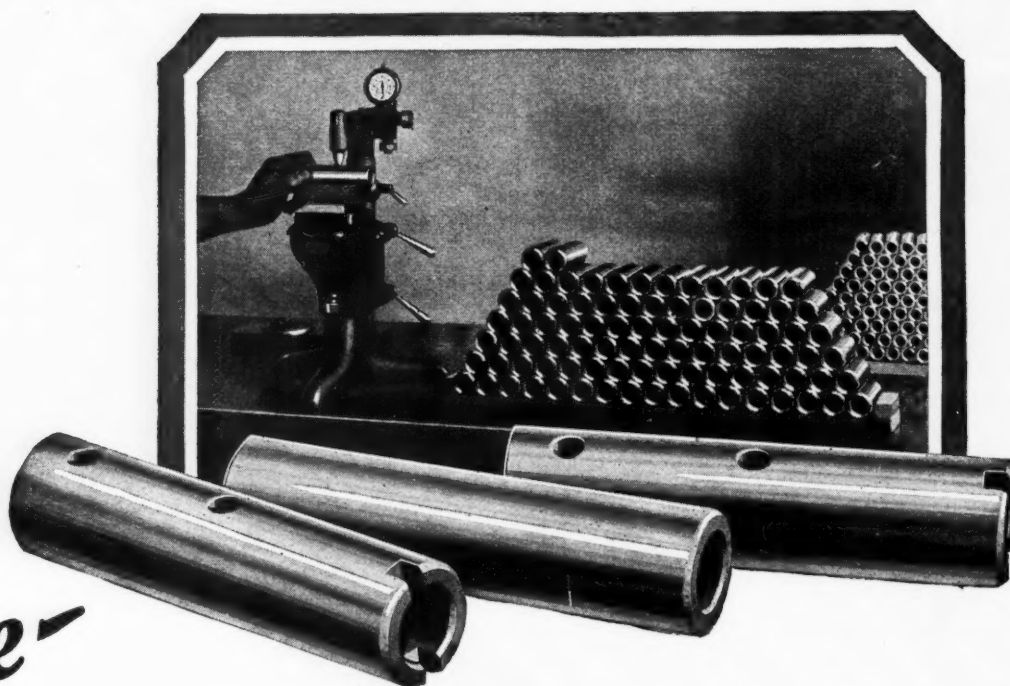
738 - 75th Ave., Milwaukee, Wis.
Automotive Equipment
Pace Setters of Quality

Five Sizes:

Price complete with Valve and Hand Control

No. 000 Extra deep tone	\$16
No. 00 22 in. length, for large cars	14
No. 0 17 in. length, for medium cars	12
No. 1 15 in. length, for small cars	10
Ford Special, 13 in. length . . .	7

McQUAY-NORRIS PISTON PINS



True-
to limits of $\frac{1}{10}$ of one one-thousandth

McQuay-Norris piston pins—after being triple heat treated—are machined to the most exacting standards of accuracy.

Each McQuay-Norris piston pin is ground round, true and straight to within $\frac{1}{10}$ of one one-thousandth of an inch. If it isn't, the inspectors, with their amplifying gauges, catch the error and reject the pin.

Remember

*The best profits
are in the best
parts. Poor re-
placement parts
can ruin a good
mechanical job.*

Individual pin accuracy and then group accuracy and uniformity assure perfect pins for the replacement trade.

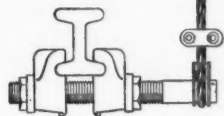
Individual wrapping before being packed in cartons retains the perfect finish that is a feature of McQuay-Norris pins.

The most rigid inspection is given all McQuay-Norris products—piston rings, pistons, pins and bearings.

The Complete McQUAY-NORRIS parts line
PISTON RINGS-PISTONS-PINS-BEARINGS

McQUAY-NORRIS MANUFACTURING COMPANY. General Offices: ST. LOUIS, U. S. A.
Factories: St. Louis, Indianapolis, Connersville, Ind.; Toronto, Canada

SALES~that's all there is



There isn't any service ever needed by Cushers, the *Flash Action* spring control.

There isn't anything to stretch, take up, wear in, wear out, lubricate, replace or adjust.

Cushers simply bolt onto car frames already drilled. Thereafter the biggest, softest tires, the longest springs, the heaviest load, the roughest road cannot produce any riding action which Cushers cannot control perfectly. For Cushers are the one device expressly created for the new needs of new design in springs and tires.

It takes just one size of Cushers to do it all. Correct action for any car is permanently established by the Cusher automatic clutch.

Cusher results are right for the market. Cusher freedom from service and size assortments is right for the trade. Cushers just can't help sweeping this field, as they are doing.

CHICAGO ROLLER SKATE COMPANY
MANUFACTURERS OF SCREW MACHINES AND AUTOMOTIVE PRODUCTS
Cusher Sales Dept., Fulton-Dean Co., 332 S. Michigan Ave., Chicago

Cushers



features that sell
the new Chevrolet

Quoting from an open letter to General Motors dealers from A. P. Sloan, President of the General Motors Corporation.

"We have two major ambitions—to make every General Motors product represent the best value in its class; and to conduct our dealings on such a basis that you (the dealer) and we together are building more solidly for the future."

With this basic policy behind such a fine product as the new Chevrolet, the future holds the most brilliant prospects for Chevrolet dealers.

CHEVROLET MOTOR COMPANY, DETROIT, MICH.
Division of General Motors Corporation

for Economical Transportation



QUALITY AT LOW COST

accident

Every accident emphasizes the need of a good windshield wiper

Car owners don't have to be "sold" on the need of having a good automatic windshield wiper. They know that many smash-ups and accidents are due to rain-covered windshields.

Yet thousands of drivers continue to use the antiquated hand wiper—or no wiper at all. They simply neglect to purchase the proper device because no one has urged them to do it. Those men will buy Bosch Electric Wipers if you look them straight in the eye, remind them of the unnecessary risks they are taking, and then point out that they can get the Bosch—the most improved wiper on the market—at only **\$9.50** (\$13.00 in Canada)

Sell the Bosch Electric Wiper as a "safety device"—not simply as a windshield cleaner. Most anyone will agree that, where his safety is at stake, he should have the most dependable unit on the market—the Bosch Electric Windshield Wiper.

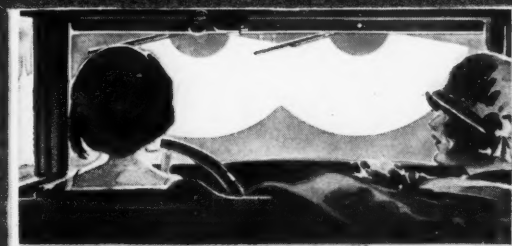
The new model, with many improvements and new features, is now available. The nearest Bosch Branch will fill your order promptly.

AMERICAN BOSCH MAGNETO CORP.

Main Office and Works: Springfield, Mass.

Branches: New York Chicago Detroit San Francisco

BOSCH
ELECTRIC
Windshield Wiper



The Bosch Tandem Attachment gives full vision to both front seat occupants—\$1.75 extra

“As Necessary As Brakes”



Bosch Plugs make good where other plugs fail

In heavy duty motors—trucks, tractors, etc.—where high compression makes ordinary plugs leak and misfire—

In worn motors, where excess oil makes regular firing difficult—

In unbalanced motors, where extreme vibration causes ordinary plugs to leak, miss and short circuit—

And in magneto equipped engines, where the intense magneto sparks quickly burn away the soft electrodes of ordinary plugs.

You can always depend on the Bosch. It's a **QUALITY** plug through and through—designed right, built with the utmost care, thoroughly inspected and tested. Five types service all popular cars—you can carry a small stock and get quick turnovers.

Be sure to sell the genuine—they're **RED**.

Ford size 75c. Other sizes \$1.00.

AMERICAN BOSCH MAGNETO CORP.

Main Office and Works: Springfield, Mass.

Branches: New York Chicago Detroit San Francisco





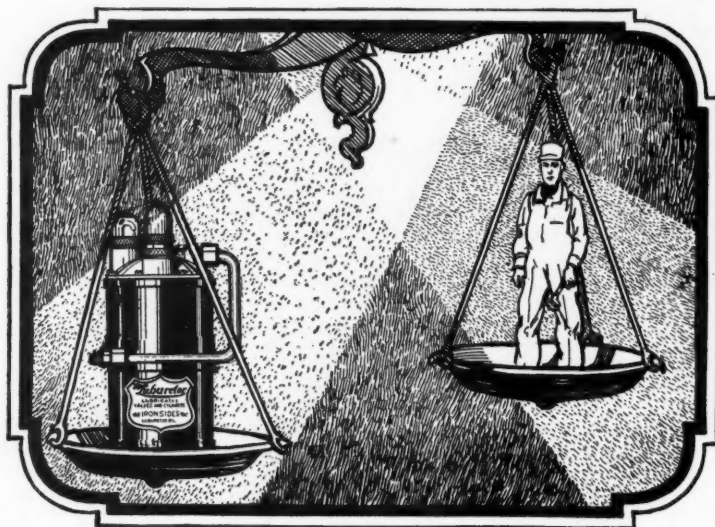
Bumps? Laugh 'em Off!

BUMP—bump—bump—*bump*! The bumps are here, there and everywhere And every bump sends a shock up the steering column to tire the man at the wheel—or jerks it from his hands wearisome hazardous! But not with the Ross Cam and Lever Steering Gear. *Then* the shock is *checked* and the wheel “stays put”. Ross steering assures new ease, safety and control.

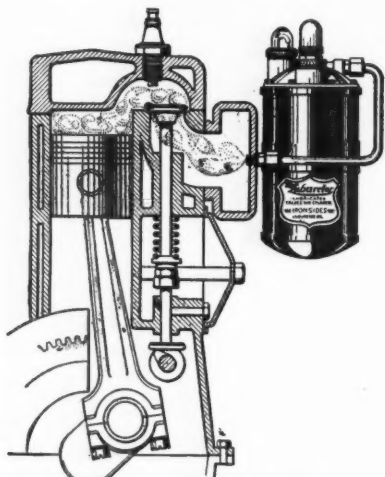
ROSS GEAR AND TOOL COMPANY, 400 Heath Street, Lafayette, Indiana

ROSS
CAM and LEVER  **STEERING GEARS**
 EASIER STEERING LESS ROAD SHOCK

AN INTRODUCTION TO THE AUTOMOTIVE INDUSTRY



PREVENTION vs. CURE



THE LUBURETOR

The Luburetor is a vacuum controlled lubricating device which provides adequate lubrication for the upper end of the engine, cylinder walls, valves, pistons and piston rings. A compensating valve of the rugged piston type, which is controlled by vacuum, accurately regulates the oil feed to correspond with the engine load and speed. The far-reaching benefits are reflected in increased motor life and economical service, reducing to an absolute minimum most of the common repair and maintenance operations, valve grinding, replacement of pistons and rings, reboring of cylinders and over-frequent changing of crank case oil.

THE old adage—"An ounce of prevention is worth a pound of cure"—is a keynote in modern manufacture. To prevent trouble is to avoid annoyance, expense and in many cases actual disaster.

In the automobile world far-seeing engineers are seeking to prevent trouble rather than to cure it.

The Luburetor, as a preventive of excessive wear, over-rapid carbon formation, leaky and sticky valves, pollution of crank case oil and kindred motor troubles, is both cheaper and better than a cure.

Dealers and Distributors see in the Luburetor a non-competitive article of universal application and appeal to owners of passenger cars, commercial cars, trucks and tractors.

Manufacturers see in the Luburetor and its principle of upper motor lubrication a means of assuring longer motor life and more satisfactory performance to the purchaser of the new car.

The Luburetor franchise in your territory will prove profitable during the Spring and Summer season. Write or wire today for complete information and sales plan. Ask for folder 10L.

THE LUBURETOR COMPANY, 471 East Broad Street, Columbus, Ohio

The Luburetor
TRADE MARK REG.

FOR ALL PASSENGER CARS, TRUCKS AND TRACTORS



No. 950
38" Long
10½" Wide at top
13" Wide at bottom
17½" High



DUS-PRUF

All Metal Automobile Trunk

Dust Proof—Water Proof—Rattle Proof

To Fit Practically Any of the Well Known Makes of Cars

Hundreds of dealers everywhere are selling DUS-PRUF trunks with entire satisfaction and enthusiasm. You do not need a large stock of DUS-PRUF trunks to start selling. Order just one trunk today as a sample. Examine it. Display it in your show rooms. See how quickly it will sell. It is the same trunk that is

Standard Equipment

on

Reo, Studebaker, Paige,
Jewett, Oldsmobile

—and service equipment on 12 others.

Here are some of the distinctive features of DUS-PRUF trunks. Lids are drawn in one piece of cold roll strip steel, eliminating metal corners and adding greatly to appearance.

Top slightly crowned results in no wave in metal. Specially designed rubber weather strip (see cut) absolutely prevents any rattle. Fully protected by patent application.

Double seam back edge construction and wire rolled bottom insure strength and rigidity. High baked enamel finish will outwear finish on car.

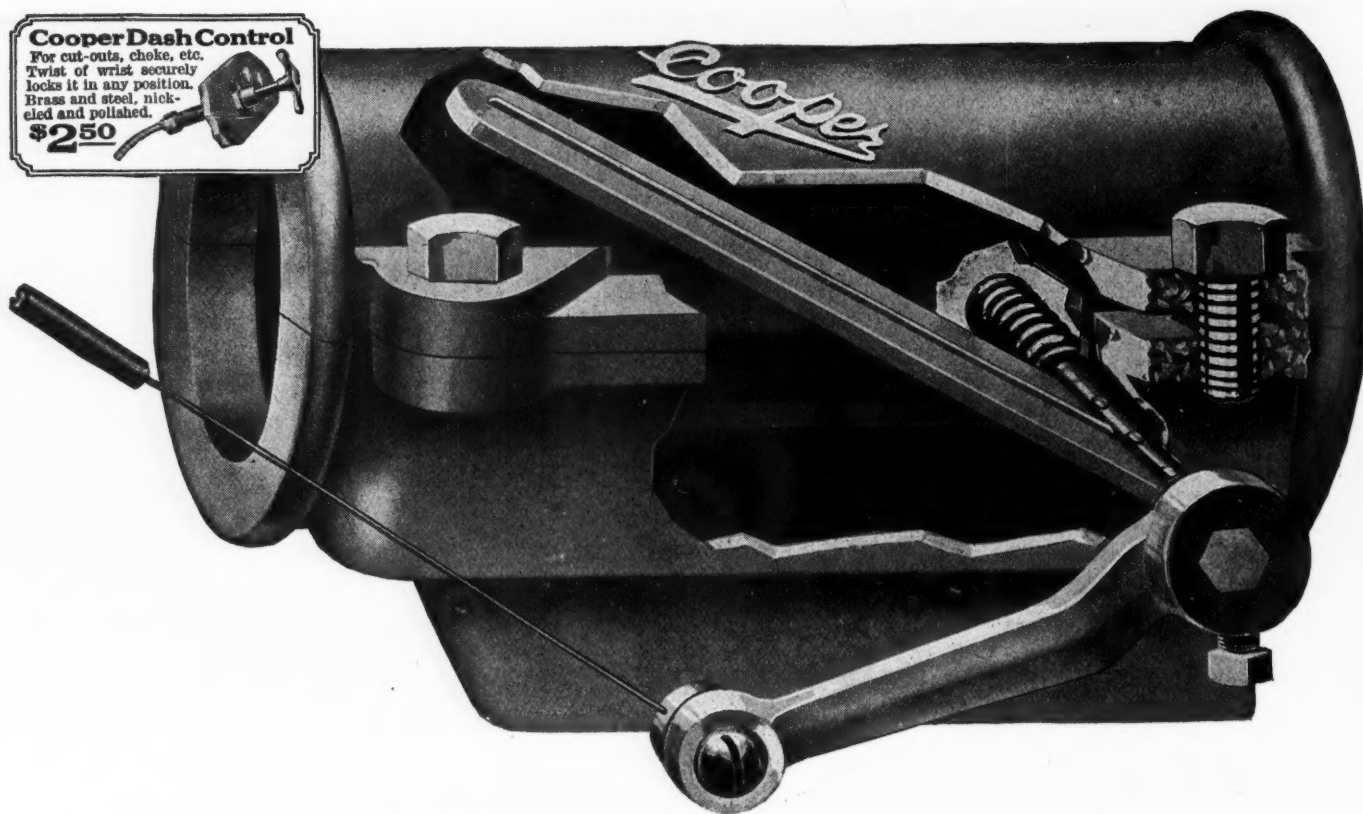
Reasonably priced and affording dealer and distributor a fair margin of profit.

Dealer and distributor inquiries from territories not yet allocated will be given prompt attention.

General Distributing Company, Mfrs.

General Office: 3-131 General Motors Bldg.

Detroit, Mich.



CUT IN ON COMPETITION

The Cooper Cut-out will help you do it. It's the cut-out that every motorist wants—the cut-out with the big sales—the cut-out that is nationally advertised. Cooper dealers soon find their reputation growing and their profits mounting.

The Cooper is a combined cut-out, engine tester and carbon outlet valve. Its staccato bark enables the motorist to listen in on his engine, see how it is running, catch the first sounds of trouble. Through its open valve he can blow away the clogging carbon deposits.

Ruggedly made, the Cooper is distinguished from all others by its more satisfactory operation. Extra heavy springs, axle and flapper keep it absolutely silent when closed. Easily installed—without severing or weakening the exhaust pipe.

In demand everywhere. Cooper dealers make big profits. Order from your jobber now.

For All Makes of Cars PRICES Valves Only

1½ in.	\$2.50
1¾, 1¾, 1¾	3.00
2, 2¾	3.50
2¼, 2¾, 2¼, 2¾	4.00
2¾, 2¾, 3	5.00
Chevrolet Special	4.00
Cooper special valve, complete with pedal, for Fords	3.00



The New Cooper, Jr.
Price \$1.25. Similar in operation.

Complete with special cut-out for Fords—\$3.75.

THE COOPER MANUFACTURING COMPANY

419 South First Avenue, Marshalltown, Iowa

Exclusive Sales Representatives

The Fulton Company, Milwaukee, Wis.

The
Cooper
CUT-OUT
ENGINE TESTER AND
CARBON OUTLET VALVE



Direct Subtraction

Exclusively a Sundstrand feature in machines priced from \$150 to \$300

Modern business demands speed and accuracy. Direct subtraction as featured in the Sundstrand *simplex* line of machines meets the demand.

Adding machines today without direct subtraction offer less than you have a right to expect and exact. Especially so as Sundstrands are priced as low as ordinary machines.

Adding—direct subtraction—automatic-shift multiplication—division. Operation is simplicity itself. Nothing new to learn.

Automatic Cross-Tabulator Carriage (optional) automatically adds, non-adds, subtracts. Provides ideally for ledger posting, statement making, stock records, etc.

Re-orders tell the story. There are thousands of Sundstrand machines in daily use.

SUNDSTRAND ADDING MACHINE COMPANY
Dept. M-4, Rockford, Ill., U. S. A.

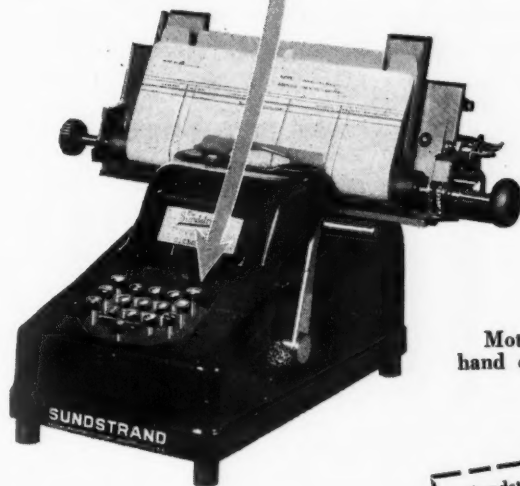
Sales and Service Stations Everywhere in the United States and Foreign Countries

Direct Subtraction
Featured Models

\$150 and up

Straight Line Models
Without

Direct Subtraction
\$100 and up



Motor or
hand operated

Sundstrand

Adding and Calculating Machines

ADDING (+) SUBTRACTING (—)
MULTIPLYING (×) DIVIDING (÷)

Sundstrand Adding Machine Co.
Dept. M-4, Rockford, Ill.
Send complete information concerning figuring machines checked below:

☐ With Direct Subtraction
☐ Without Direct Subtraction
☐ With Automatic Cross-Tabulator Carriage

Name _____
Address _____ State _____
City _____
Nature of business _____

For quality and
economy in oxy-
acetylene welding
and cutting there
is no portable gas
the equal of

Prest-O-Lite

DISSOLVED ACETYLENE

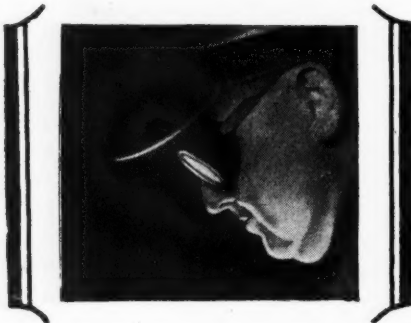
THE PREST-O-LITE COMPANY, INC.

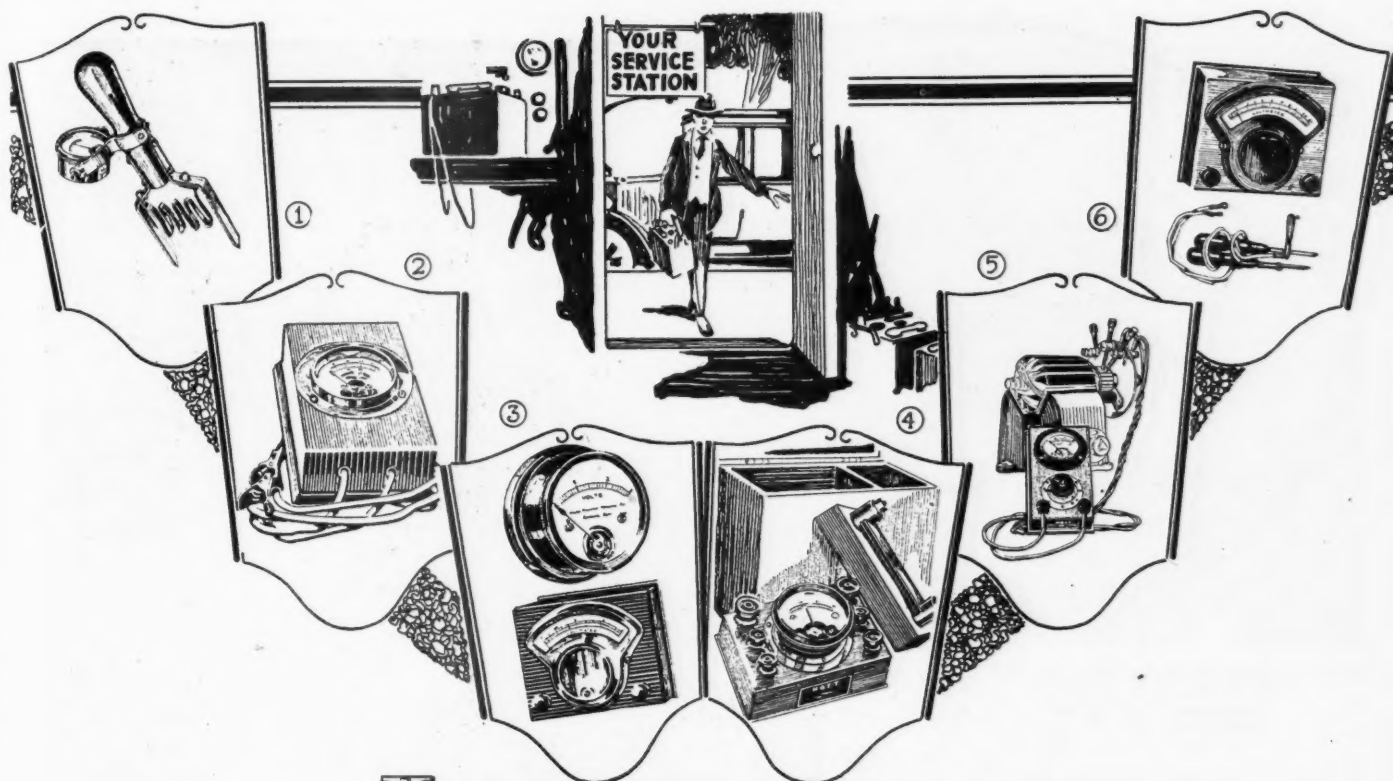
Oxy-Acetylene Division

General Offices: Carbide & Carbon Bldg., 30 East 42d St., New York

In Canada: Prest-O-Lite Co. of Canada, Limited, Toronto

31 Plants—55 Warehouses—21 District Sales Offices





Let these instruments bring YOU business!

1. CELL TESTER:—Accurate, moving coil type meter, removable from brackets for non-resistance testing. \$11.00.

2. MAGNETOMETER:—A. C. current volt-meter for testing Ford magnets. $4\frac{1}{4}'' \times 3\frac{3}{4}'' \times 2''$. \$10.00.

3. PANEL AND PORTABLE AMMETERS AND VOLTMETERS:—Panel (circular) type 3" dia. All voltages to 150. Portable ammeters in case, for A. C. or D. C. current. \$10.00.

4. ROTARY METER:—Combination volt-ammeter, employing commutator principle. With shunt, \$25.00; case \$5.00 extra. Size $4\frac{1}{2}'' \times 3\frac{3}{4}'' \times 2\frac{1}{2}''$.

5. GROWLER TESTER:—Low range A. C. current meter and rheostat for testing all armature windings on any standard growler. Meter with contact ring \$19.00, meter alone, \$15.00.

6. CADMIUM METER:—Shows condition negative and positive plates. Moving coil type meter, jewelled, with cadmium prods, \$17.50; without prods, \$15.00. Volts range 3-0-27.

Autoists take their profitable business wherever the service station equipment helps to **REDUCE** their bills.

Ignition service being most frequently called for, is decidedly profitable—if you have the proper equipment, if not, you are being taxed for it through lost business.

Each instrument pictured above will save the initial cost many times over in time saved; the less expensive labor becomes equally expert in finding trouble sources, and hidden ignition defects are brought plainly to your customer's attention.

There are no better practical instruments, all absolutely accurate, extremely well constructed of the best materials obtainable, practically accident proof and inexpensive.

The BURTON ROGERS Co

Sales Department for Hoyt Electrical Instruments..

26 BRIGHTON AVENUE,
BOSTON, MASS.

Hoyt instruments are sold by your jobber..



Hunting Down Electric Troubles

Is a handbook all ignition specialists, battery-men, service stations should have.

The different methods of electrical "trouble-shooting" are clearly and interestingly told and profusely illustrated, showing graphically the instruments used and method of testing generators, armatures, starting-motors and batteries. It answers all your questions that may arise from time to time.

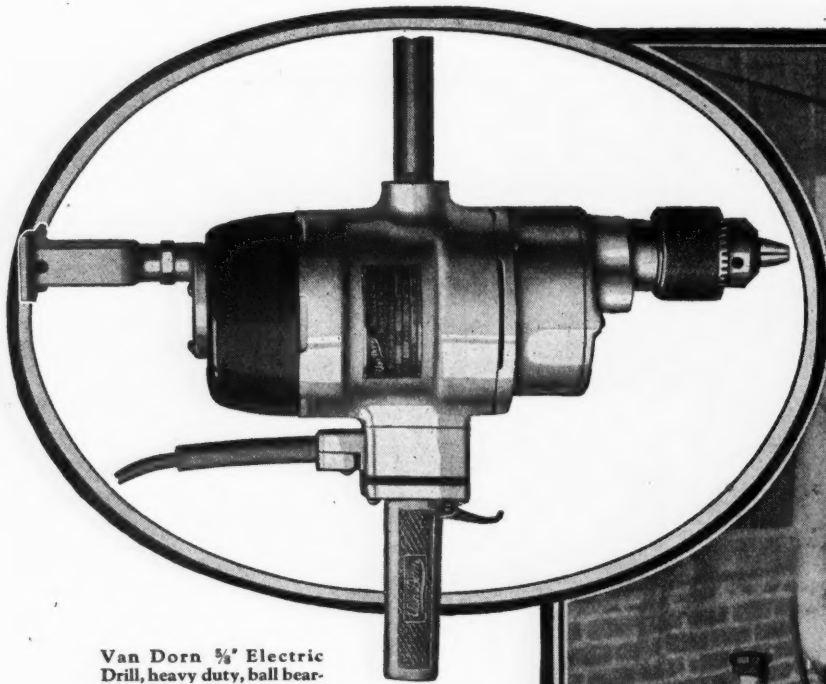
Get your copy while supply lasts—10 cts. with coupon.

COUPON

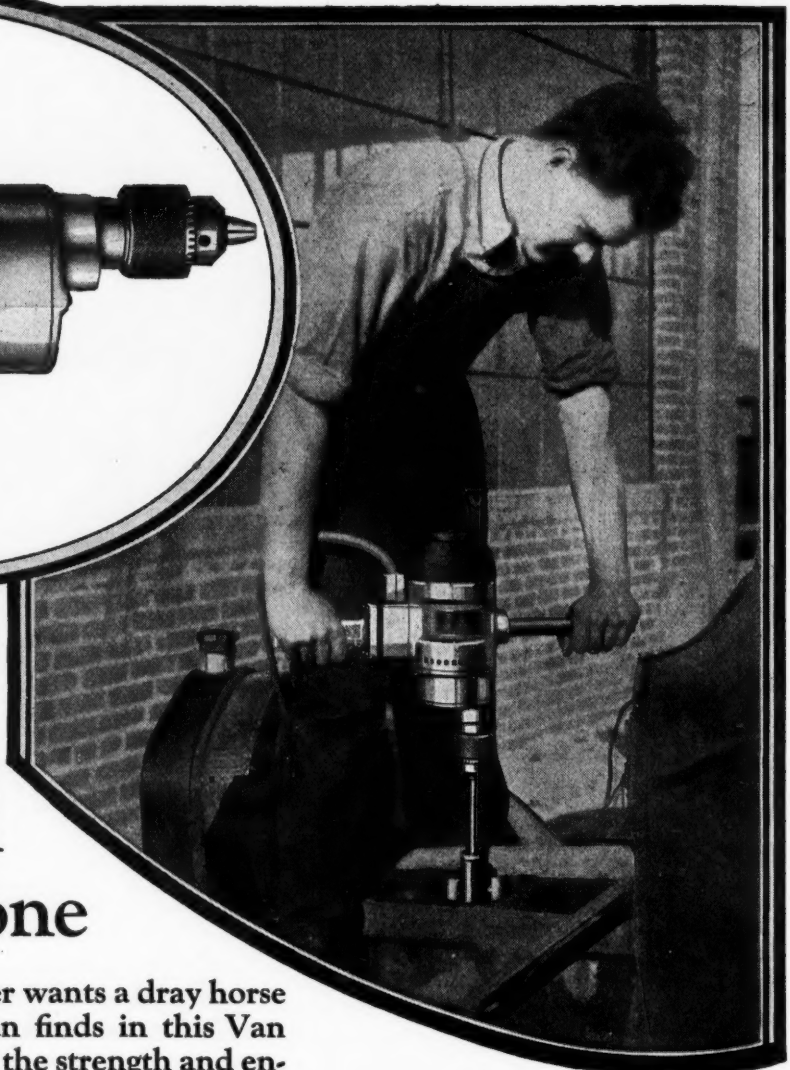
Please send me booklet "Hunting Down Electrical Troubles" for which I inclose 10 cents.

Name

Address



Van Dorn 5/8" Electric Drill, heavy duty, ball bearing, weighs 22 pounds and sells for only \$85.00.



Van Dorn 5/8" Electric Drill driving hone for refinishing automobile cylinders.

Power to Pull the Stiffest Hone

In honing as in hauling, the driver wants a dray horse and not a pony. The garage man finds in this Van Dorn 5/8" heavy duty electric drill the strength and endurance of a truck horse when it comes to hard work.

This tool is a regular Hercules for heavy maintenance jobs, for truck repairs, for driving the stiffest cylinder hones:—In fact, wherever great reserve power is required. It's a hard hitter in the pinches, and should be part of the equipment in every garage.

Automotive Jobbers—This is a rare opportunity to take on this highly respected family of holmakers. "Van Dorn" Prestige, Performance and Publicity insures quick sales and good profits. May our representative call?

The Van Dorn Electric Tool Company
Makers of Portable Electric Drilling, Reaming and Grinding Machines, Etc.
Cleveland, Ohio

"Van Dorn"
ELECTRIC DRILLS

Sales and Service Branches

Boston	New York City
Buffalo	Philadelphia
Chattanooga	Pittsburgh
Chicago	Richmond
Cincinnati	St. Louis
Detroit	St. Paul
Kansas City	Salt Lake City
Los Angeles	San Francisco
Montreal	Seattle

Toronto



Ralph Mulford drove this Chandler roadster with a Schebler Model "S" Carburetor 1000 miles around the Culver City (Calif.) track on February 4, 1925, in 689 minutes—an average speed of 86.96 miles an hour—the fastest 1000 miles ever driven on wheels.

New Performance Records Go with EXACT Carburetion



EXACT Carburetion sets a new standard for automobile performance. With every other thing about the automobile you sell perfected, the NEW Schebler Model "S" will bring out astonishingly better performance results.

EXACT carburetion steps engine performance up to new high levels.

Chandler has lowered a 1000-mile speed record that stood nearly three years with the Pike's Peak Motor in a stock roadster with special gear ratio. The NEW Schebler Model "S" Carburetor is standard equipment on Chandler cars.

Whether for special tests in competition, or for ordinary driving conditions, performance is astonishingly better in every respect with the *exact* carburetion provided by the NEW Schebler Model "S" Carburetor—for all automobiles.

DEALERS:—Good territories are open for Wheeler-Schebler dealers. **EXACT** carburetion will build sales for you. Write us for information.

WHEELER-SCHEBLER CARBURETOR COMPANY
INDIANAPOLIS

SCHEBLER
*The World's
Finest* **CARBURETORS**

"Built Stronger— They Last Longer!"



That's the slogan that won the check for fifty dollars offered in our slogan contest.

It was submitted by Mr. G. D. Jones, of Macon Ga.

Of the thousands of slogans sent in, this phrase best expresses our manufacturing policy and what our dealers and users think of American-Akron tires.

The quality of materials and the way they are put together in our tires make this slogan a true statement of fact—worthy of constant repetition.



Balloon Tires

recently added to our complete line of Heavy Duty pneumatics will help bring American-Akron dealers a big volume of this year's renewal business.

A few distributors territories are still open. Write for the four big features we offer exclusive distributors.

If you sell air bags, send for our 1925 proposition. American-Akron air-bags are justly famous for that same reason—

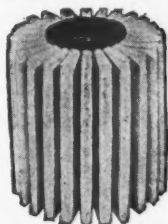
**"Built Stronger—
They Last Longer"**

THE AMERICAN RUBBER & TIRE CO.
Akron, Ohio, U. S. A.

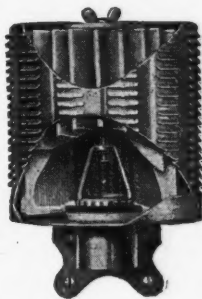
Text of
one-half
page
advertisement
appearing
in
Saturday
Evening
Post
on
March 14th

99⁹/₁₀ **PROTECTOMOTOR** **99⁹/₁₀**
EFFICIENT REG. U.S. PAT. OFF. Perfect Positive Protection EFFICIENT

*It Filters
the Air*



Clean white filtering medium before being placed in service on machine



*It Filters
the Air*



After service, showing dust, sand, grit and dirt kept out of the motor

Advertisements
of
similar
nature
will
appear
in
the
Post
during
1925

Health of Men and Motors Depends on Filtered Air

Nature filters the air that you draw into your lungs with every breath; by the same method Protectomotor filters the 9,000 gallons of air drawn into your motor with every gallon of gas.

Dust, sand and grit in unfiltered air wear cylinder walls, pistons, piston rings, gears and all moving parts.

Protectomotor filters the air and reduces wear and tear on your motor from 75% to 85%, as shown by many tests including U. S. Government tests.

Dust, sand and grit in unfiltered air cause most of the carbon that makes most of the motor troubles.

Protectomotor filters the air and reduces carbon deposits from 60% to 75%, as shown by careful tests and actual operation on thousands of machines.

Protectomotor stops the hissing, whistling carburetor noises so annoying to motorists.

Protectomotor controls air temperatures, makes for greater efficiency in use of gas and eliminates frequent carburetor adjustments.

Specify Protectomotor When You Buy a Car

Equipped with a Protectomotor the motor in your car will give quiet, efficient service three to five times as long before it is necessary to remove carbon and regrind valves; three to five times the service before overhauling the motor is necessary.

When you buy a new car, insure better returns on your investment, longer life for the motor, freedom from motor troubles by having it equipped with a Protectomotor.

Give the motor of your present car a longer lease on life and save yourself expense and trouble by having it equipped with a Protectomotor.

If your dealer cannot supply you, write us direct, giving make and model of car and make and model of carburetor. Protectomotor is easy to install. Requires no attention. Has nothing to wear out or get out of order. Does not reduce horsepower.

Standard Equipment on Many Machines

Quick to recognize the motor life-saving qualities and moved by a desire to have their machines give best possible service, these manufacturers have already made Protectomotor standard equipment:—

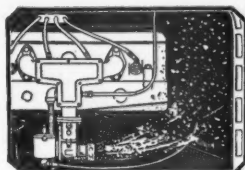
Andre Citroen (France), Bean Spray Pump Co., Buffalo Springfield Roller Co., Bucyrus Co., J. I. Case T. M. Co., Clark Tractor Co., Elgin Street Sweeper Co., Fageol Motors Co., Fiat (Italy), Field Force Pump Co., General Motors Truck Co., Holt

Manufacturing Co., Ideal Power Lawn Mower Co., International Harvester Co., LeRoi Engine Co., Mack Truck Co., Turner & Moore Engine Co., Willys-Overland for Willys-Knight cars, Yellow Coach Mfg. Co., (Makers of Fifth Avenue Buses), and many others.

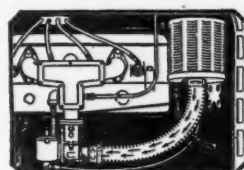
Dealers

Will you or
your
competitor
make the
Protecto-
motor
sales
during
1925?

Attractive Proposition for Distributors, Dealers and High-Grade Salesmen



To the left: Dirty, dust-laden air that causes wear. To the right: Clean air delivered by Protectomotor. No dust or grit to cause wear.



STAYNEW FILTER CORPORATION

ROCHESTER, N. Y.

A Motor Without a Protectomotor Is Like a Watch Without a Case!

Makers

Can you
afford
not
to make
Protecto-
motor
Standard
Equipment
on your car?

Did You Enjoy This Copy?

You can get one like it every week for only \$3.00 a year—an average cost of a little less than six cents each.

Every man in the trade needs MOTOR AGE—needs the positive help it offers in the solution of daily problems and the valuable ideas it gathers for its readers. **Your competitor reads MOTOR AGE**, and you need to read it also if you want to keep up with the leaders of the automotive field.

Here's How MOTOR AGE Will Help You

Servicing

MOTOR AGE will show you how to make flat rates—How to sell Service—How to make customers permanent—How to organize a workshop—How to handle knotty problems—How to select Machinery—How to test electrical systems—How to make quick repairs—How to route shop work.

Selling

How other men do it—How to keep down overhead—How to advertise—How to make Salesmen produce—How to create a market—How to find prospects—How to make every sale pay—How to avoid losses—How to write letters that build business.

Hiring

How to get the right men—How to train them—How to pay them—How to get their co-operation—How to keep them enthusiastic.

Buying

How to select an accessory stock—How to judge merchandise—How to get a fast turnover—How to avoid dead items.

And then

Whatever else you need to know to make your business run smoothly MOTOR AGE will tell you if you only ask—All personal inquiries receive personal attention from our editors. Every subscriber is encouraged to come to us with his problems, whether mechanical, legal, architectural or financial. Try us, and we will give you "Service you will like."

The coupon is here for your convenience. If you are already a subscriber, pass it on to some friend in the trade who is not. When he starts getting MOTOR AGE, he'll appreciate the favor.

MOTOR AGE

5 South Wabash Ave.,
Chicago, Ill.

IMPORTANT MOTOR AGE is published exclusively for the trade. Subscriptions are accepted only from those actively engaged in our field—so please don't forget to include your business card or letter head with this order.

Gentlemen: Enclosed find \$3.00 to pay for a year's subscription to MOTOR AGE, including all special issues published during the life of my subscription.

Name.....

Street and No.....

City..... State.....

Firm Name.....

NOTE—If you are already subscribing to MOTOR AGE, please hand this coupon to a dealer who is not. He'll become a better competitor from reading MOTOR AGE.

It is not unusual to find Buick owners who have driven nothing but Buicks for years. It is unusual to find any Buick owner, no matter when he started, who is not intensely loyal to Buick.

A very satisfactory part of the business of a Buick dealer lies in supplying Buick families with new Buicks whenever they need a new car.



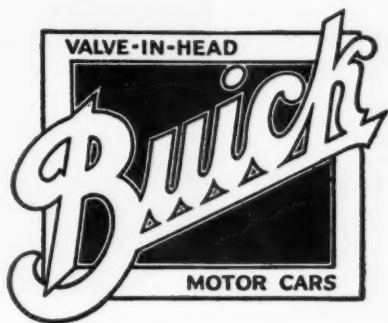
Those desiring the Buick franchise should have their names on file.

BUICK MOTOR COMPANY
Flint, Michigan

Division of General Motors Corporation

Pioneer Builders of Valve-in-Head Motor Cars
Branches in All Principal Cities—Dealers Everywhere

Canadian Factories:
McLaughlin-Buick, Oshawa, Ont.



WHEN BETTER AUTOMOBILES ARE BUILT, BUICK WILL BUILD THEM



Drilling out cylinder head bolt close to cowl—an awkward job made easy by "Yankee" Double Ratchet.

Tight against cowl yet he drills easily

He doesn't need space to revolve crank of "Yankee" Ratchet Breast Drill.

When set on DOUBLE Ratchet any slight movement of crank back and forth causes drill to cut continuously.

By doing the otherwise impossible jobs, a "Yankee" Ratchet Breast Drill saves the time and expense of taking down construction.

"Yankee" Ratchet Breast Drill No. 1555

Five ratchet adjustments changed by touch on Ratchet shifter. Two speeds, changed without removing drill from work. 3-jaw chuck holds round shank drills up to 1/2 inch.

No. 555. 2-jaw chuck holds both rounds and squares up to 1/2 inch.

Some Other "YANKEE" TOOLS

Ratchet Hand Drills	Automatic Push Drills
Ratchet Chain Drills	Ratchet Screw-drivers
Ratchet Bench Drills	Ratchet Tap Wrenches
Ratchet Bit Brace	



"Yankee" on the tool you buy means the utmost in quality, efficiency and durability.

Dealers everywhere sell "Yankee" Tools

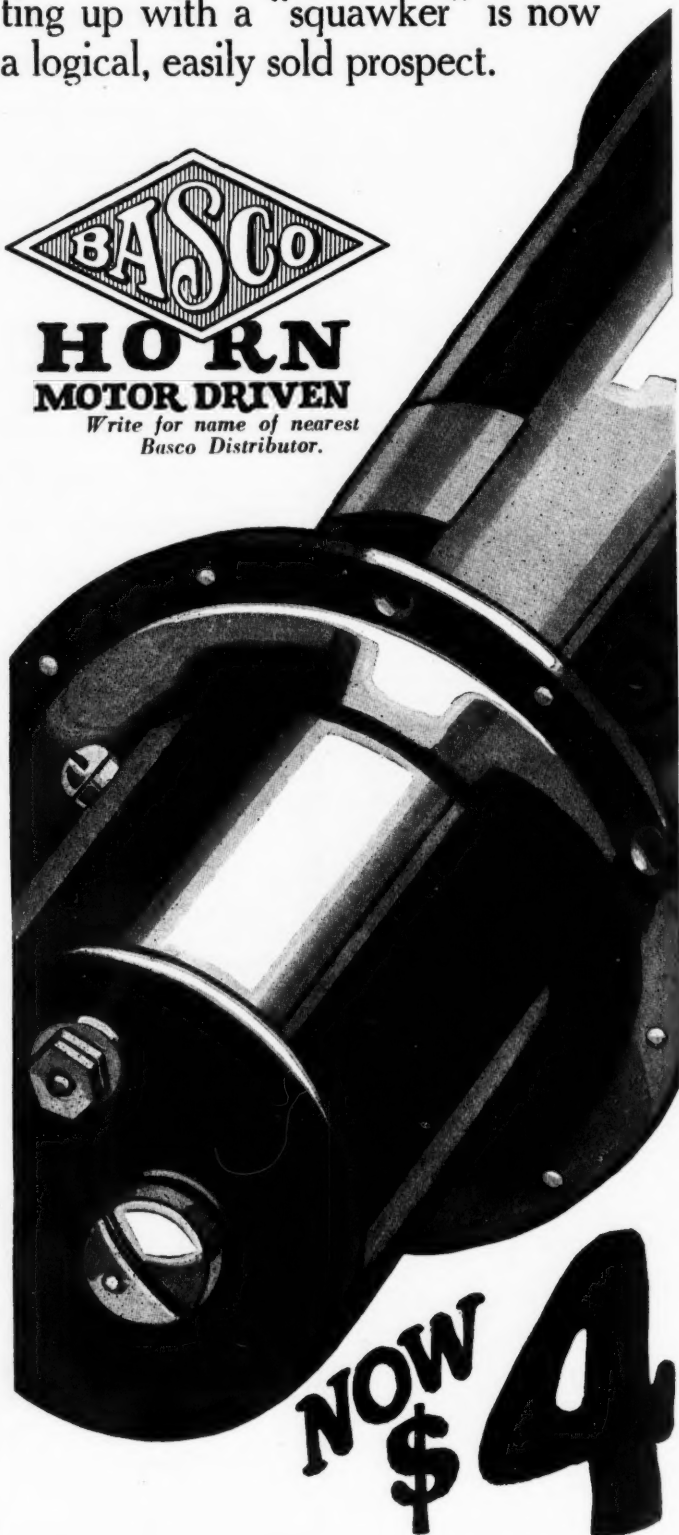
FREE—to you

Interesting book illustrating and describing all "Yankee" Tools. If you like unusual tools, you'll want a copy.

NORTH BROS. MFG. CO., Philadelphia, U. S. A.

"YANKEE" TOOLS
Make Better Mechanics

NO other motor driven horn of comparable size, tone, looks or electrical excellence, has ever been offered to the light car owner for so little money. Sales are proving it! Every car owner still putting up with a "squawker" is now a logical, easily sold prospect.



BRIGGS & STRATTON CORP.
MILWAUKEE  WISCONSIN



*New Things Happen
Every Week*

The automotive industry is young—and growing. Every day there are changes of importance. Every week there are developments that may well change the policies of many going dealer establishments.

The difference between profit and loss—or between profit and more profit—may hinge on the dealer's knowledge of what is going on.

That is why MOTOR AGE is published every week, and why those who read every issue find it most valuable, and one of their greatest paying investments.

**R
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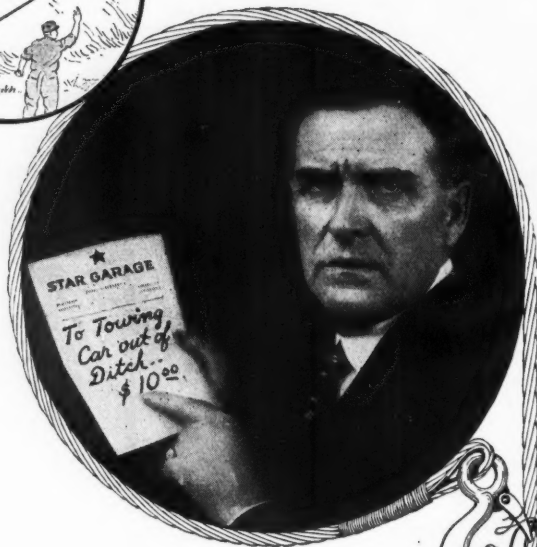
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MOTOR AGE

5 So. Wabash Ave.

Chicago, Ill.



"I Could Buy an Autowline for Half the Cost!"

Sure you can; for \$4.95 you can buy the *original* wire rope towline, and absolutely safeguard against emergencies. Light, compact, dependable, it's tow-home insurance at no more cost than a box of cigars!

One car-owner writes: "I have carried a Basline Autowline in five different cars, and have demonstrated it to many a traveler. It's sure *there* 'when a feller needs a friend.'"

But don't accept substitutes—there are many imitators—be sure you get Basline Autowline, made of world-famous Yellow Strand Wire Rope. Can be tucked under a seat Cushion. Snaps on instantly with patented Snaffle Hooks that cannot loosen. Now \$4.95, east of Rockies.

MONEY FOR JOBBERS AND DEALERS:

Basline Autowline pays you a good profit, it sells well, and is the *only* Nationally-Advertised towline on the market. Push it this season.

BRODERICK & BASCOM ROPE CO.

ST. LOUIS—NEW YORK



GR-102

BASLINE AUTOWLINE

MORRISON

AUTOMATIC DOUBLE RANGE Worm Drive JACKS



Made in 9 sizes for all service requirements. Special model for Balloon Tires.

Can't slip or tilt

The flexible steel "Sure Hold" cap prevents dangerous slipping. The long folding handle (36 in. to 72 in.) operates from standing position.

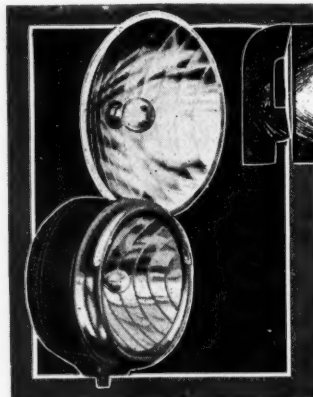
High class construction throughout. Vanadium steel gears and standard make bearings.

Write for sample for test.

Woods Engineering Co.

Alliance, Ohio

This Jack has been furnished as standard equipment on high class passenger cars, trucks, buses and fire engines for the past 4 years



Flatlite

**"flatlites
bring
daytime
safety to
nighttime
driving"**

flatlite

is making money for distributors and dealers—are you sharing in this prosperity?

BECAUSE flatlites legalize full, undiffused headlamp illumination, no lenses absorb and dilute the light that is needed to show the way. The full power of the bulbs is used projecting a road-wide beam of brilliance far ahead—but well below the eyes of the oncoming driver.

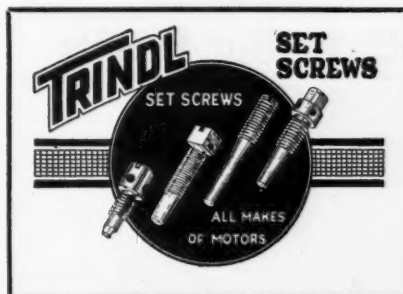
REFLECTORS
for replacement in any headlamp
HEADLAMPS
to fit all cars

The
American Flatlite
Company
Department A

Reading Rd. at Dandridge St.

Cincinnati, Ohio.

Now



TRINDL PISTON PIN SET SCREWS

Trindl Piston Pin Set Screws are now available for the trade specializing in Standard Replacement Parts. Trindl Piston Pin Set Screws can be furnished for all automobile, truck and tractor motors requiring piston pin set screws. The line is complete, prices right. Trindl Set Screws are packed in cartons, one set to the carton. They are guaranteed to be exact factory duplicates and are manufactured with the same care, precision and excellent workmanship as

TRINDL QUALITY PISTON PINS
and
TRINDL SUPER WARP PROOF VALVES

*Complete proposition, prices, discounts and name of
jobber in your territory upon request*



Permanent — Prompt — Profitable

TITANIC replacements are permanent—the correct use of alloy steel in the making of TITANICS and the rigid tests through which they are put insure their reliability under all conditions.

TITANIC service is prompt—36-hour service, or better, on everything—the very latest and the most antique models.

TITANIC Springs bring satisfaction to your customers and good will and profits to you.

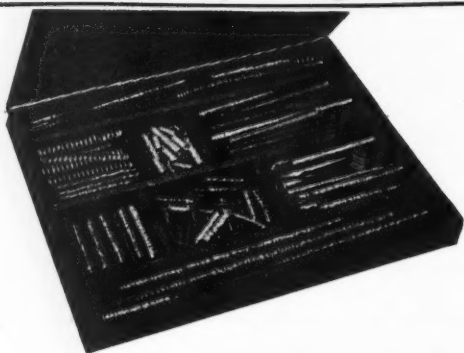
TUTHILL SPRING CO., 760 Polk St., Chicago, Ill.

Quality Spring Builders for Forty-five Years

TITANIC SPRINGS

Alloy Steel Throughout

Small outlay - Big Profits



\$3⁵⁰
LIST

PECK GARAGE ASSORTMENT

Earn good money on spring replacements from this PECK Garage Assortment. The most needed sizes in generous quantities. A \$3.50 investment yielding big profits on replacement jobs. You'll like the strong partitioned box included with this set. Mention Jobber when ordering. The Peck Spring Co., Plainville, Conn.

A Continued Story of the Industry

READING MOTOR AGE every week is very much like following the growth of the automotive industry in story form.

It is as interesting as a fiction serial, and instructive to the point of making better and more prosperous dealers.

Reading MOTOR AGE every week when it comes, assures subscribers that they will stay up to date and profit accordingly.

MOTOR AGE

5 So. Wabash Ave.

Chicago, Ill.

Enormous Price Reductions on Highest Quality Armature Winding



We make these reductions due to the huge volume of business which we are getting from dealers all over the country.

FORD Generator Armatures Rewound.....	\$1.50 ea.
FORD Starter Armatures Rewound	1.50 ea.
ALL OTHER TYPES TWO-UNIT Generator Armatures Rewound.....	3.25 ea.
ALL OTHER TYPES TWO-UNIT Starter Armatures Rewound.....	3.25 ea.
ALL TYPES MOTOR GENERATOR Armatures Rewound.....	8.00 ea.

GUARANTEED to give the same satisfaction as new armatures.

H.M. FREDERICKS CO.
Armature Winding Specialists
Lock Haven Penna.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912

Of MOTOR AGE published Weekly at Chicago, Illinois for April 1, 1925

STATE OF Illinois COUNTY OF Cook Notary Public SS.

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared E. E. Haight, who, having been duly sworn according to law, deposes and says that he is the Business Manager of MOTOR AGE, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of Publisher	THE CLASS JOURNAL COMPANY	Post Office Address
Director	Julian Chase	239 W. 39th St., New York, N. Y.
Managing Editor	Sam Shelton	5 So. Wabash Ave., Chicago, Ill.
Business Manager	E. E. Haight	5 So. Wabash Ave., Chicago, Ill.

2. That the owners are: (If the publication is owned by an individual his name and address, or if owned by more than one individual the name and address of each, should be given below; if the publication is owned by a corporation the name of the corporation and the names and addresses of the stockholders owning or holding one per cent or more of the total amount of stock should be given.)

UNITED PUBLISHERS CORPORATION: Stockholders—John C. Curtis, London, England; Fritz J. Frank, Pleasantville, N. Y.; Mabel M. Griffiths, Montclair, N. J.; W. H. Lindsay, 508 W. 112th St., New York, N. Y.; J. H. McGraw, Jr., 10th Ave. & 38th St., New York, N. Y.; Elizabeth S. Mekeel, Montclair, N. J.; A. C. Pearson, Upper Montclair, N. J.; Lelia C. Pearson, Upper Montclair, N. J.; Chas. G. Phillips, Upper Montclair, N. J.; Charles Swayne Phillips, Upper Montclair, N. J.; Publishers Securities Co., Montclair, N. J. (see note); Jennie M. Phillips, Upper Montclair, N. J.; W. I. Ralph, 231 W. 39th St., New York, N. Y.; Franklin T. Root, Bronxville, N. Y.; Olive Root, Bronxville, N. Y.; Root Securities Corporation, 239 W. 39th St., New York, N. Y. (see note); Winifred Root, 2 West 67th St., New York, N. Y.; Charles T. Root, 2 West 67th St., New York, N. Y.; Elizabeth S. Root, 2 West 67th St., New York, N. Y.; G. E. Sly, 630 W. 141st St., New York, N. Y.; Veima S. Stevens, 325 West End Avenue, New York, N. Y.; M. J. Swetland, Trustee for Grace E. Swetland, Redlands, Calif.; W. H. Taylor, Upper Montclair, N. J.; Everit B. Terhune, Boston, Mass.; James Artman, 4538 Chestnut St., Philadelphia, Pa.; George H. Buzby, 19th and Walnut Sts., Philadelphia, Pa.; C. A. Mosselman, Merion, Pa.

NOTE: Stockholders of Publishers Securities Co.: Veima S. Stevens, 325 West End Ave., New York City; M. J. Swetland, Trustee for Grace E. Swetland, Redlands, Calif.; Ruth S. Kane, Montclair, N. J.; and Dorothy S. Johnson, New York, N. Y.

Stockholders of Root Securities Corporation: F. T. Root, Bronxville, N. Y.; George F. Root, Bronxville, N. Y.; Ralph Root, Brooklyn, N. Y.; Winifred Root, New York City; Royal P. Root, New York City; Esther S. Root, New York City; and Waldo Root, New York City.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state) NONE.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but, also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

E. E. HAIGHT, Business Manager.
Sworn to and subscribed before me this Twenty-sixth day of March, 1925.

(SEAL)

MARGARET T. WILSON.
(My commission expires September 9, 1926.)

"Sells the Car" TAG

CAR. DOOR. HANDLE

It hangs on the steering wheel of the open car or on the door handle of the closed car. Always in sight of the car buyer. Tells at a glance the make, model, price and list of equipment.

Thousands of these tags now in use in salesrooms throughout this country and abroad. Made of rich blue leatherette, celluloid facing over car data.

Embossed in gold with any car monogram.

Tags come in two sizes.

Data display space, 6 inches by 4 inches and 5 inches by 3 inches.



Sample Order of 3

6 in. x 4 in. \$1.40 each
5 in. x 3 in. 1.25 each

Order of 6

1.25 each
1.00 each

Postpaid on receipt of price. Special prices on larger quantities.

ART BOOKBINDING CO.

119 W. 42nd Street, New York City



This Book Sent Free

Free to any garage or repair shop owner or manager who will write for it on his business stationery.

Articles on—

Sales Campaigns,
Battery Departments,
Service Departments,

Tire Departments,
Used Car Problem,
Stock Room Records,

Preventing losses on gas, oil, etc.

Simple, practical business suggestions that will show you how to safeguard your entire establishment.

Comfort Printing Specialty Company

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HELP YOUR CUSTOMERS TO FORGET THEIR CHAIN TROUBLES HELP YOURSELF TO MORE CUSTOMERS AND MORE PROFITS

By replacing only with

"WHITNEY" SILENT HIGH MILEAGE CHAINS

There are over 2,000,000 "Whitney" chains on the road today. Over 1,000,000 "Whitney" chains have been installed as original equipment on one well known make of car. Over 70,000 "Whitney" chains have been installed for replacements on the camshaft drive of one prominent motor although not used as original equipment on this car.

It is the GREATER MILEAGE that does it.

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W W "IDEAL"

Assortment of
COTTER PINS

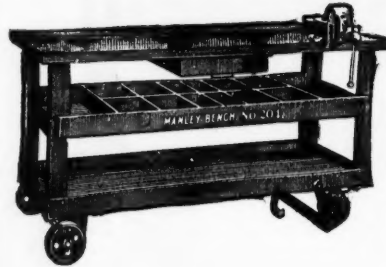
Packed in a practical size, round screw-top box, attractively and fully labeled. Containing 100 assorted Cotter Pins, sizes from 1/16"x1/2" to 5/32"x1-1/2". This is the standard automobile assortment.

We also make the well known W. W. Assortment in Leatherette covered cases as well as assortments for Agricultural Implements and Hardware requirements. We manufacture all sizes of Cotter Pins—Steel and Brass.

Ask your jobber for the W. W. Line

WESTERN WIRE PRODUCTS COMPANY
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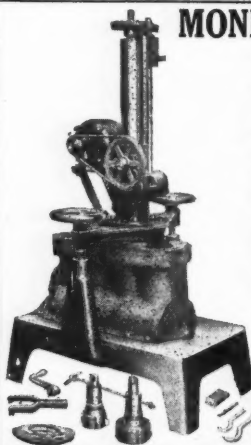
Get a Manley



PORTABLE WORK BENCH. In repair shops the stationary Benches are built along the wall, and are located at considerable distance from the car upon which work is being done. This necessitates many steps, consuming time and the energy of the workman, all of which is saved by placing the Manley Bench at the car. Manley Portable Work Benches are of a substantial construction, with hard wood top, steel drawer, shelf partitions, seasoned wood, roller bearing casters, and provision made for locking wheels. Made in two sizes.

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MONEY MAKING MACHINES

STORMIZING machines are truly money makers. They enable you to make biggest profits on every overhaul job. They handle all your cylinder renewing, accurately and efficiently, enabling you to turn out the high quality work that wins your customers' lasting approval. The automatic time and labor saving features make big profits possible by lowering operation costs.

Write for the Storm Book, "Modern Cylinder Methods"

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406 A Sixth Ave. So., Minneapolis

FOLLETT'S NEW MODEL TIME STAMP

—accounts for every labor minute



Learn the interesting details from our descriptive data.

Prints the year, month, day, hour, minute, A. M. or P. M. at the exact moment the plunger is pressed—like this, for example:

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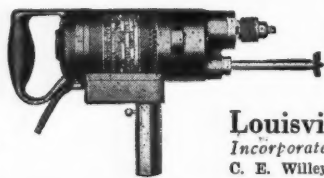
Tells when a job is started—and when it is finished. There can be no dispute over the time charge.

Absolutely automatic—except for winding. Every machine guaranteed.

Follett Time Recording Co., 217 High Street, Newark, N. J.
"Established Since 1904"

Get This "Pioneer" \$65 Garage Special

Electric Drill and Valve Grinder

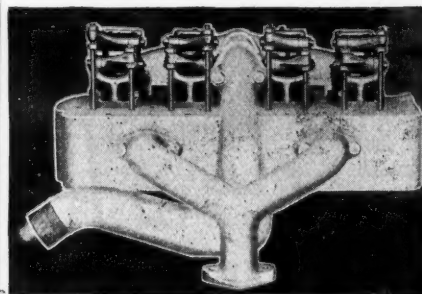


Greatest time and money saver, as well as money maker, for your shop—

"It Will Do The Work"

Louisville Electric Mfg. Co.
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C. E. Willey, Pres. J. B. McFerran, Secy.-Treas.

ROOF 16 OVERHEAD VALVE EQUIPMENT For Ford and Dodge Motors ROOF 8 VALVE HEAD FOR FORD MOTOR

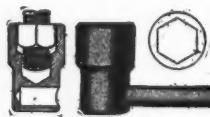


Stupendous Power—
Lightning Speed

Ford racing cars with Roof Equipment are rivals on mile and one half mile tracks of the highest priced racing cars. Doubles the pulling power of the Ford or Dodge pleasure car or truck. Hill climbing and general road work beyond wildest dreams of the owner. Complete—ready for installation—no machine work necessary. We are headquarters for all speed equipment. No matter what you want, write us. Racing quality—lowest prices. A postal card brings you complete list of our specialties.

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Heavy Duty Socket Wrenches



Offset Type

Extra strong construction with extra depth sockets—heat treated.

Plain lacquer finish—twenty-eight standard sizes.

Ask for Catalog No. 400.



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DIFFERENT AND BETTER than any other shock absorbing device. Let us tell you about our special INTRODUCTORY OFFER for a limited time to a limited number of dealers.

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Manufacturers of Kokomo Windshield Wings, Kokomo Mirrors, Kokomo Transmission Lining



It's cheaper to replace than to repair—

You can hammer and patch a Ford fender but it will never be the same nor will it last much longer.

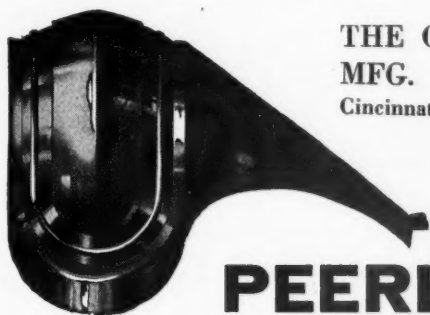
The time to repair is the time to replace. It will be cheaper, better and permanent if you replace with Peerless deLuxe Fenders.

Peerless deLuxe Fenders are designed on graceful sweeping lines with a pattern that not only lends beauty but strength. The

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The price. That's the thing. Ford owners can obtain a set of four deLuxe fenders through you at \$20 and the discount we allow will have you call it fine business.

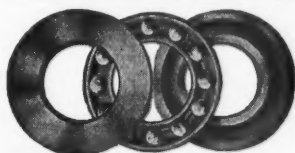
Drop us a line today for details and discounts.



\$20
per set

PEERLESS
deLuxe
FENDERS

**THE CORCORAN
MFG. COMPANY**
Cincinnati Ohio



We offer the services of our Engineers in assisting Designers on layouts involving the use of Thrust Ball Bearings in any type of machine where Thrust Ball Bearings can be used. Our broad experience covers many years. We are ready to serve you at any time.

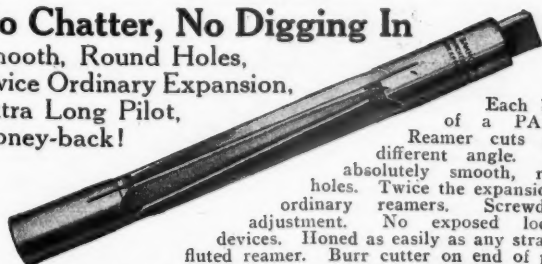
THE BEARINGS COMPANY OF AMERICA

LANCASTER, PENNA.

Western Sales Office,

1012 Ford Bldg., Detroit, Mich.

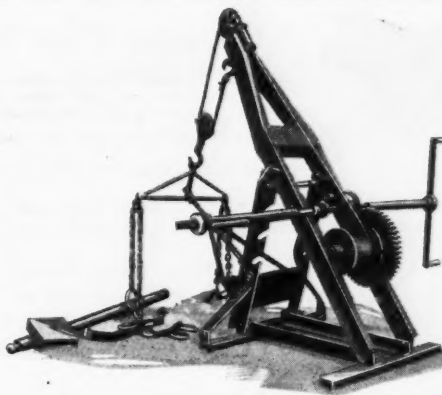
No Chatter, No Digging In
Smooth, Round Holes,
Twice Ordinary Expansion,
Extra Long Pilot,
Money-back!



Each blade of a PAROB Reamer cuts at a different angle. Cuts absolutely smooth, round holes. Twice the expansion of ordinary reamers. Screwdriver adjustment. No exposed locking devices. Honed as easily as any straight-fluted reamer. Burr cutter on end of pilot.

Made in all sizes. Can be made in multiple series. Ask about Gammons Taper Pin Reamers. They reduce costs of reaming for taper pins two-thirds. Price-list mailed to all.

**PAROB EXPANSION
HAND REAMER**
THE GAMMONS-HOLMAN CO.
DEPT. C. MANCHESTER, CONN.



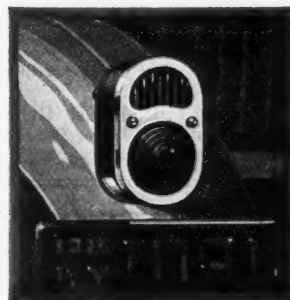
No Crane like this—

The KLEIN-KRANE. Built by STRUCTURAL STEEL FABRICATORS. 50 ft. STEEL CABLE. No chains. SWIVEL HEAD permits pull from ANY ANGLE. Boom instantly ADJUSTABLE by one man. PROP SUPPORT from boom to ground eliminates strain on service-car. A TOW-BAR and CRADLE that makes towed car track perfectly. Positively NO SIDE-SWAY. 2½-ton capacity.

Pronounced by Dealers, Garage and Service Station owners to be far in advance of any other type of shop and service-car crane. Put a KLEIN-KRANE in YOUR shop—save time and money. Write at once for full particulars.

The Klein Structural Steel Co.
Bellevue, Ohio

KLEIN KRANE



As
handsome
as any
part of
any car

THE VICTOR combination stop and tail lamps add not only to the safety of the cars they are on, but add to their beauty as well. Designed with tasteful and artistic simplicity, with the metal parts finished in black enamel and nickel, they blend so perfectly with the other rear appointments, that they seem built in rather than attached.

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Tasco Gasoline Gauge takes the place of the filler cap and saves the mean job of "measuring" the gas in the tank. For Fords, Chevrolets and Overlands.

\$1.25
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KISSEL

CUSTOM BUILT

The Kissel Dealer does not meet competition. He makes others meet it.

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The Market's Best Foot Rest

Drive all day in comfort without foot-burn or leg strain. Protects shoes and floor-boards. Adjustable to all sized people and cars. Makes possible an even flow of gas over rough roads. Insulates from engine heat. Fits all cars having an accelerator. Substantially made of polished aluminum. Easily installed, no alteration or extra parts.

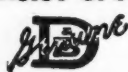
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Price Senior \$3.50
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Adams Mfg. Co.
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Every
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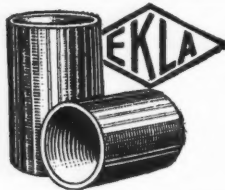


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SILENT TIMING GEARS and CHAINS

Dalton & Balch, Inc.

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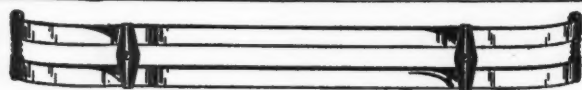


EKLA Ail-Rubber Radiator Hose

—is tough and long-wearing—not easily damaged by heat, oil, vibration or radiator compounds. Sold in cut lengths for Fords and 3-foot lengths, all sizes with inch markings.

EKLA prices allow unusual profits to the trade.

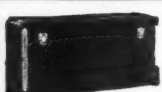
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Spring-steel, Oil-tempered Bumpers in Six Complete Styles. Guaranteed Satisfactory Attaching Arms for all Leading Makes of Cars.

We invite comparison in appearance, quality and price.

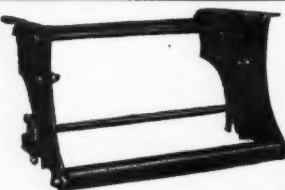
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BRADLEY Auto Trunks & Racks

Simple in design. Light in weight. Easy to install. No drilling or fitting. For Buick, Hudson, Essex, Chevrolet, Maxwell, Chrysler, Reo, Dodge, Rollins, Hupmobile, Studebaker, Willys-Knight and Overland.

Bradley Motor Products Co.
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The F-J Reamer Sharpener is only one of the famous F-J Family of Motor Re-Conditioning Tools. Write for Catalog.



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Made in many sizes to meet any and all requirements in garage, tire repair shop and filling station. Six types: Two Stage, Single Stage, Air Cooled, Water

Cooled, Stationary, Portable. Our low prices enable you to get a Compressor for a small investment. Send for literature.

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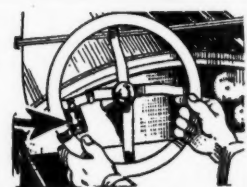
INSTANDIM Light Control Right on the Steering Wheel

Move the thumb and lights are dim! Attached to steering wheel in 15 minutes. A low-priced convenience. Safety factor.

NEW PRICES

Style A for headlights—\$1.75. Style B for headlights and spotlights—\$3.00. Big discounts—Write.

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Let us send you our FREE Catalogue on

Huetter's Fly-Wheel GearBands

Huetter Machine & Tool Co.

546 Kentucky Ave.

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Curtis Pneumatic Machinery Co.

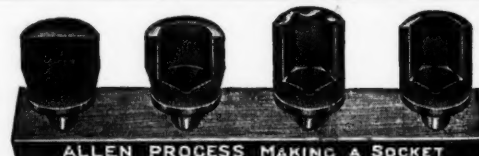
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BRANCHES

AHLBERG BEARING COMPANY
321 EAST TWENTY-NINTH STREET CHICAGO ILLINOIS

Cold-
Drawn
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Wrench
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The Allen Manufacturing Company, Hartford, Conn.

MONOGRAM ORIGINAL SELF LOCKING RADIATOR CAP

THE KINGSLEY-MILLER COMPANY
Successors to the General Automotive Corp.,
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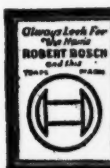


\$300 PROFIT EVERY MONTH WITH 8 HOUR BATTERY CHARGING

Just \$35 cash puts this HB Constant Potential Battery Charging outfit in your shop—complete with bench, bus bars, resistance loads, connectors, cables, etc.—all ready to set up and operate. Easy terms on balance. The lowest-priced complete outfit on the market. 30 days' trial on money-back guarantee. Write for free bulletin 251.

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Built by the oldest maker of Portable Electric Drills in the World.

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THE UNITED STATES ELECTRICAL TOOL CO.
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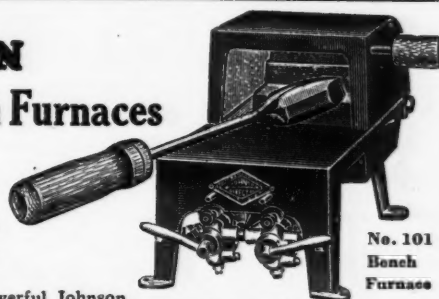
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New Era could save 43¢ a bumper—a lot of money on our output—by simply burlaping and tying for shipment. Wrapping, cartons, and final polishing save you time, however.

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Soldering,
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There is a difference in bumpers. Find out why WEEDS are better—why they sell quicker.

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It's a V shaped belt, constructed of tough fabric and a new special rubber compound. Sizes for all popular cars using V or grooved pulleys. Write for prices and complete information.



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Gilmer



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Here's Why

It outsells 'em all. It is so easy to apply. It is the most popular clamp. The price is right. And we haven't said a word about its superior qualities of material and manufacture.

Made and guaranteed by

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The Money-Making Line— WILLYS-OVERLAND Fine MOTOR CARS



ACCURATELY
DALL
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REPLACEMENT PISTONS

Semi-steel—for use after a rebore or re-grind job. Made to manufacturer's specifications. Made to pass motor builder's inspection. Standard sizes and oversize. Write for price list.

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fit behind piston rings and keep them in perfect contact with the cylinder walls at any motor speed or temperature.

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Conneaut Plastic Metallic Packing molds in fingers. Fits in stuffing box. Forms a practically frictionless bearing. "Take it up" like a bearing. \$1.65 in one pound cans. Remarkable results. Your jobber has it or write direct.

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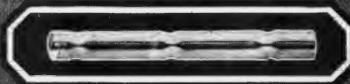
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Factories: Cleveland, Pontiac, Albany
Branches: New York, Boston, Chicago, Philadelphia, Cleveland
Detroit Office: General Motors Building

TIMKEN Tapered ROLLER BEARINGS

KESTER Acid-Core WIRE SOLDER

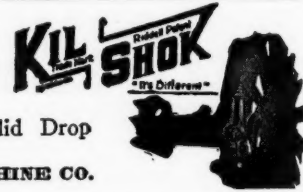
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Pulls Car Over Rough Spots



No friction—no springs—no oiling. For Fords—solid Drop Forging—\$24.00.

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ALMOND "STRAIGHT LINE" DRILL CHUCKS

When buying Portable Electric Drills be sure to look for the distinctive ALMOND CHUCK, which may be easily identified by the "STRAIGHT LINE" milling on the chuck body.

Write for complete information regarding the new ALMOND "STRAIGHT LINE" CHUCKS.

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BULL DOG Foot Accelerator for Fords

It sells everywhere. Fits all Fords and Carburetors for Fords. Easiest installation. Positive operation. Bull Dog Complete sells for \$1.50 with generous profit for dealers.

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SPENCER, IOWA



FREE
With 20
Bull Dogs

Johns-Manville ASBESTOS BRAKE LINING

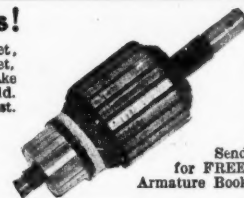
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Big money in this service

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This system has turned a job into an impressive, highly profitable business.

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After using Hall Hones for over one year Buick test out the New Hall Hone and approve of it. It is the only Hone endorsed by Buick.

THE HALL MFG. COMPANY

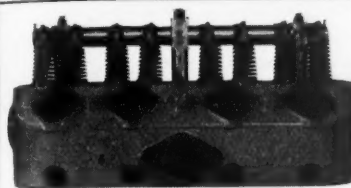
434 Dorr St., Toledo, Ohio



Lorentzen Headlight Kontrol

AN AUTOMOTIVE
NECESSITY THAT SELLS

LORENTZEN HEADLIGHT KONTROL, INC.
60 Grand St., New York City



Badall 8-Valve Racing Head for Dodge Brothers Motors

A record-breaker for speed. Send for free, illustrated folder.

Badall Motor & Mfg. Co.
107 Douglas St., Hammond, Ind.



Goodrich Cable is sold in lengths found to be the most popular with the average buyer—coils of 100 ft. packed in individual cartons. Both shop men and car owners like the clean 100 ft. package idea—and this leads to quick and profitable sales. Send for samples, prices and discounts.

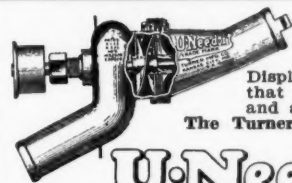
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NO TOOLS—It's Self-Closing



Repair Link for Broken Cross Chains
A Flower City Self-Closing Link attached with fingers to loose ends of broken chain closes and locks on first turn of wheel. Stops clanking—saves fender—low-priced. Box of 10 Links retails for 25 cents. Write for samples and discounts. Distributors wanted.

FLOWER CITY SPECIALTY CO.
Rochester, N. Y.



To Cash In on the Ford Field

Display this Rotary Pump. A pump that really pumps. Efficient at all speeds and all levels.

The Turner Mfg. Co., 31st and Roanoke Rd.
Kansas City, Mo.

U-Need-It ROTARY PUMP for FORDS

TAKE THE END-PLAY OUT!



—WITHOUT PULLING THE MOTOR

THE C. A. ADJUSTABLE CENTER BEARING CAP corrects Ford crankshaft end play and sets magnets for highest efficiency without removing the motor. Easily and quickly installed. Guaranteed for one year. List price \$3.75. Ask your jobber or dealer or write us direct.

ADJUSTABLE BEARING CO., Inc.
Dept. M. Brazil, Indiana

Put new pep in your fan belt business with

GRATON & KNIGHT Standardized LEATHER BELTING



UNIVERSAL HOSE CLAMP

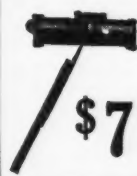
Adjustable. Two sizes will clamp any hose of any diameter. Made from cold rolled steel out of wire. No rough edges to cut hose. Put on in less than a minute. Everlastingly leak-proof. Order Universal Hose Clamps. Trademark on every clamp and carton. Get them from your jobber—or write us.

UNIVERSAL INDUSTRIAL CORP.

Hackensack, N. J.

FISK TIRES

There's a Fisk Tire of extra value in every size, for car, truck or speed wagon



THE "Universal" Model (left) and the "Junior" Model (right) are the two automatic windshield cleaners you can depend upon for steady sales with no "come-backs."

The Folberth Auto Specialty Co.
Cleveland, Ohio

FOLBERTH
Automatic
WINDSHIELD CLEANER



Bumpers, tempered and nickel-plated by our exclusive processes. Strong brackets, fit all bumpers.

GEMCO MFG. CO.
760 S. Pierce St.
Milwaukee, Wis.



Write for catalog

CLASSIFIED ADVERTISING

PARTS

HOUSE OF A MILLION AUTO PARTS

The largest stock of new and used car and truck parts in the world. We have everything. Always mention model and serial number in order. Write us. All inquiries answered promptly.

DOUGLAS AUTO PARTS CO., INC.
2003-5-7-9 South State St., Chicago, Ill.

DOWMETAL PISTONS

Lighter, stronger, and longer wearing than aluminum or iron. Can be fitted with bronze bushings in the wrist pin holes same as in iron pistons. Dowmetal has no permanent growth. The expansion is little more than iron.

SEND FOR PARTICULARS

LAMBERT & MANN CO.
Cylinder and Crankshaft Grinding

215-21 N. Wood St. CHICAGO Phone West 4918

AUTO PARTS

SAVES 50% TO 75% ON ALL CARS

New and Used Gears—Springs and Axles—Cylinders—Motors—Rear Systems, etc. Wire or Write

INDIANA AUTO PARTS CO.

316-18 NO. ILLINOIS ST. INDIANAPOLIS, IND.
LARGEST CAR WRECKERS IN INDIANA

MITCHELL, COLUMBIA, LIBERTY, STEPHENS and PREMIER. Parts for all models. Discount to the trade. Mitchell Co., 421 W. 55th St., New York.

PARTS

FRANKLIN PERFECT PARTS SELECTED FROM DISMANTLED CARS. NO JUNK. IF YOU WANT REAL FRANKLIN PARTS, PERFECT IN EVERY RESPECT. AT HALF LIST PRICE, WRITE BAIRD, 302 HIGHLAND ST., SYRACUSE, N. Y.

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LEADING DISTRIBUTORSHIP IN SOUTHWEST CITY

Must dispose of profitable growing distributorship. Leading medium priced line. Established business. 30,000 population. Ideal healthful year-round climate. Large territory. \$25,000 will handle. Exceptional opportunity. Address Box 6216, care of Motor Age, 5 S. Wabash Ave., Chicago, Ill.

FOR SALE—Garage and Business on cross road, four miles from Stamford, Connecticut, in growing community. Good reason for selling. Address A. B. Joy, General Delivery, Stamford, Conn.

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FOR SALE—183 cu. in. Duesenberg straight eight racing car. This was Jimmy Murphy's French Grand Prix Car. Cheap for quick sale, with all extra parts. Arthur R. Bartold, 150 Westcott St., Rochester, New York.

FOR SALE—Two Peugeot 181-inch Speedway 3 A. racing cars. These are new, only run one race. Price \$1,250 each. J. M. Herod, 4506 Forsyth Ave., East Chicago, Ind.

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Attorney-at-Law and Solicitor of Patents
C. L. PARKER

Formerly Member Examining Corps, United States Patent Office

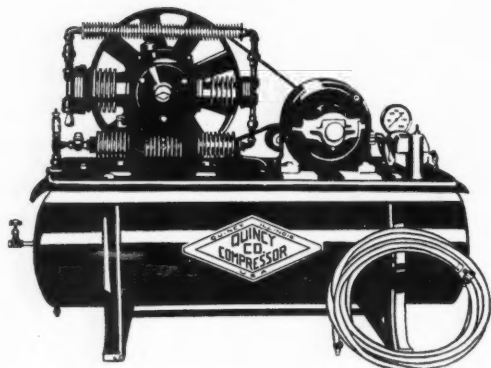
American and foreign Patents secured. Searches made to determine patentability and validity. Patent suits conducted. Pamphlet of instruction sent upon request. McGill Building, WASHINGTON, D. C.

PATENTS

BOOKLET FREE HIGHEST REFERENCES
PROMPTNESS ASSURED BEST RESULTS
Send drawing or model for examination and report as to patentability

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SKIMP? No, Never!



We could save a few dimes here, and shave a few dollars off the cost there . . . if we wanted to. You wouldn't know it, at least for several years. As a matter of fact, we don't and won't do it. We do not skimp a job. We build the best compressor we know how to build, and we do the job well. Our products meet the demands of modern business. They stand up and give service. They are up-to-date in design. They give satisfaction and they give it permanently. Our business is increasing. If you want to stock and sell our line, write to us. If you are in the market for any of our products, it will be to your interest to fill out, sign and mail the attached coupon to us today.

Quincy Compressor Co.

Name formerly

Wall Pump and Compressor Company

217 Maine St., Quincy, Ill., U. S. A.



QUINCY COMPRESSOR CO.,
217 Maine St.,
Quincy, Ill.

Please send me further information about the equipment you manufacture.

Name Street
City State

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If she squeaks



touch her up with

KEY Graphite PASTE

If you have followed our advertisements in Motor Age you will be impressed with the many, many things that Key Graphite Paste does.

It stops squeaks. That's just one of them. Not so important as the use on gaskets or battery terminals, but a happy stunt if squeaks fuss you.

Dilute a small quantity with water, run it in where the squeak chirps from and smile.

A wonderful selling article, for it has 15 major uses on a car and a multitude of minor ones.

KEY BOILER EQUIPMENT CO.
27th and McCasland Ave., E. St. Louis, Ill.

For
Free
Sample

Key Boiler Equipment Co.
27th and McCasland Ave., E. St. Louis, Ill.

NAME.....
ADDRESS.....

M. A. 4-9-25

GATES HOSE

"The Standardized Radiator Hose"

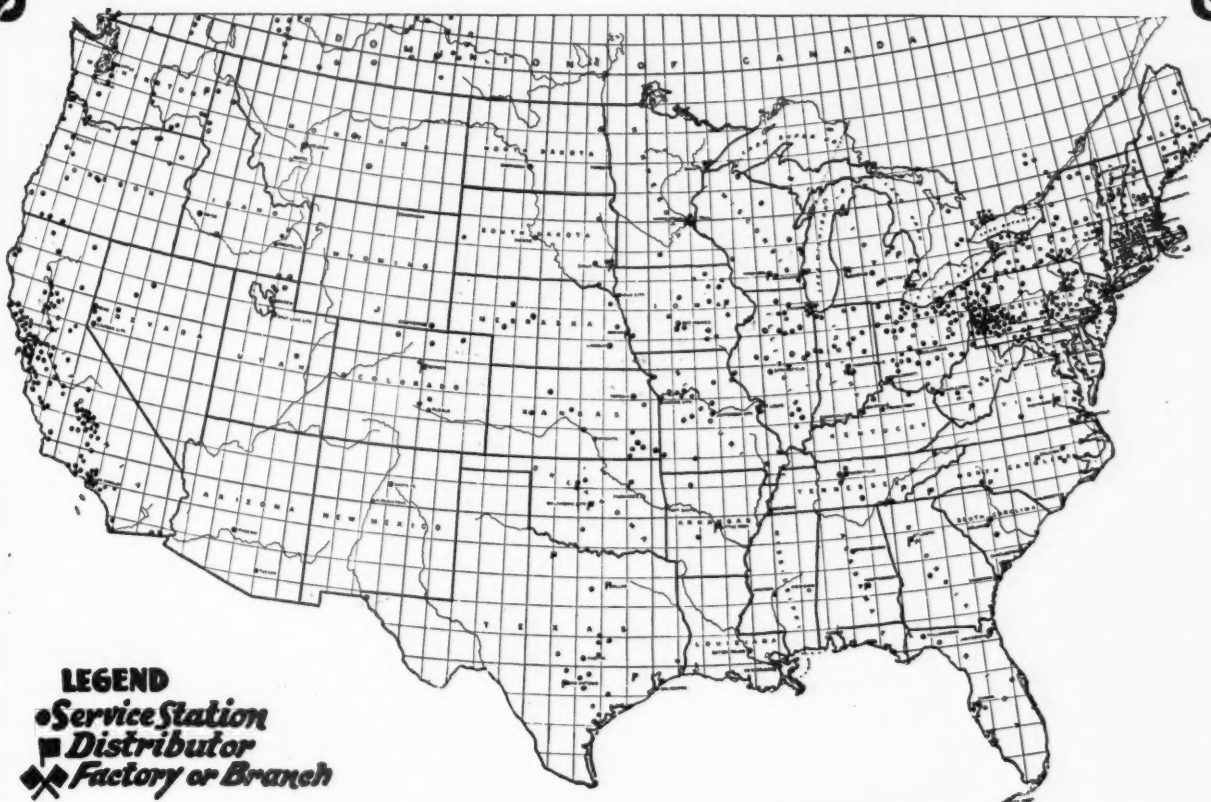


Marked by Inches
Easily Cut to Length

Where do you find radiator hose getting worn? **Inside,** you say. True—and that's why Gates Vulco Hose is built with the tougher rubber lining.

Made by the World's Largest
Manufacturers of Fan Belts.

ZENITH



LEGEND
 • Service Station
 ■ Distributor
 ♦ Factory or Branch

Zenith Nation-Wide Service

ZENITH
 CARBURETOR

There is a Zenith for every
 car, truck, bus, tractor, air-
 plane, boat or industrial engine

The Zenith-equipped car—wherever it goes, here or abroad—never outdistances Zenith service. Only accident or years of use, brings the need of service to the *fixed adjustment* Zenith, but it is a source of satisfaction to the car owner, and an added sales value for the dealer, that if needed, it is at hand.

This organization of branches, distributors, dealers and stations—numbering over a thousand—co-operates with garages and car dealers to increase owner satisfaction.

ZENITH-DETROIT CORPORATION

Manufacturer of

ZENITH CARBURETORS

DETROIT

MICHIGAN

Branches:

NEW YORK

CLEVELAND

CHICAGO

Over 1,000 Service Stations



A New Republic 3 tons

THE engine is most economical for its power. The frame is much deeper, and most scientifically cross-braced. The radiator is of new design and 12% larger. The tires are one and two inches larger. The springs are heavier. The axle is oil-bathed to the very ends. The braking is exclusive. Shifting is easier. Steering is lighter. The cab is wide-vision, wide entrance. There is extreme accessibility. There is an air-cleaner. There is an easy-filling tank spout. There is big tool space opening to the outside. There is not an unimproved spot on this

greater new Yellow Chassis Republic.

It is bettering even the traditional Republic economy and endurance records which have always outstripped other trucks. It is a truck of more miles and less gallons; with more years on the road; and less days in the shop.

This New Republic is another factor in greatest Republic success today. The factory, the sales-power, and the service are on a par with the character of this new model. A whole line of such good trucks is embraced in the Republic dealer franchise.

REPUBLIC MOTOR TRUCK COMPANY, INC., ALMA, MICHIGAN
More Trucks in Use than any other Exclusive Truck Builder

REPUBLIC *Yellow Chassis* TRUCKS